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American Perspectives on Security

Energy, Environment, Nuclear Weapons, and Terrorism: 2010

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Abstract

We report findings from an Internet survey and a subset of questions administered by telephone among the American public in mid-2010 on US energy and environmental security. Key areas of investigation include public perceptions shaping the context for debate about a comprehensive national energy policy, and what levels of importance are assigned to various prospective energy technologies. Additionally, we investigate how public views on global climate change are evolving, how the public assesses the risks and benefits of nuclear energy, preferences for managing used nuclear fuel, and public trust in sources of scientific and technical information.

We also report findings from a national Internet survey and a subset of questions administered by telephone in mid-2010 on public views of the relevance of US nuclear weapons today, support for strategic arms control, and assessments of the potential for nuclear abolition. Additionally, we analyze evolving public views of the threat of terrorism, assessments of progress in the struggle against terrorism, and tolerance for intrusive antiterror policies.

Where possible, findings from each survey are compared with previous surveys in this series for analyses of trends.

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Executive Summary

Chapter One: Introduction and Overview

This report summarizes findings from an Internet survey conducted May 17–18, 2010 of US general public views on selected nuclear security and terrorism issues and a telephone survey of a subset of those questions collected May 9–June 10, 2010. We also report findings from an Internet survey focusing on energy and environmental security conducted June 8–9 and a telephone survey of a subset of those questions conducted between June 1 and July 5, 2010. Each of the surveys builds on previous foundational studies in this series to show opinion change over time.

Chapter Two: Energy and Environmental Security

Q: How are key public perceptions and beliefs shaping the context for debate about a comprehensive national energy policy? (pg. 27)

The economy, healthcare, and energy are among the top public concerns in 2010. Since 2008, public confidence in the adequacy of future energy supplies has increased significantly to slightly above midscale, but mean satisfaction with US energy policies overall remains below midscale. Risks of burning fossil fuels for generating electricity now are considered commensurate with risks of nuclear generation. Renewable energy sources are perceived to pose significantly lower risks than fossil or nuclear sources. Most respondents support a mix of conservation and development of energy resources, with priority given to development of new sources. Participants report a preference for moving toward an energy mix of about 50 percent renewables, about 28 percent fossil fuels, and about 22 percent nuclear energy by 2030. Only 23 percent of respondents oppose further exploring and developing US deposits of oil and gas, and even after the Gulf oil spill, only 36 percent oppose drilling additional off-shore wells.

Q: What comparative levels of importance do Americans assign to prospective energy technologies, and how are priorities differentiated by demographics and partisan subgroups? (pg. 37)

For all ten energy technologies we included for evaluation, the *importance* placed on R&D averages well above midscale. However, three categories of *priority* for research and development can be discerned. The emphasis of our inquiry is on the future, where most respondents place solar, wind, and hydro generation technologies in the top tier in terms of priority for R&D investments. A mid-level tier also is evident, consisting of electrical transmission and distribution technologies, geothermal, biomass, and fuel cell technologies. For the US energy future, clean coal, nuclear generation, and oil and gas are given lower priority by most participants. Future energy priorities are differentiated by political partisanship, with Republicans placing greater importance on electrical transmission and distribution technologies and US oil and gas development, while assigning lower priority to biomass and fuel cell technologies.

Q: How are views on global climate change evolving, and how do they relate to support for prospective cap-and-trade policies? (pg. 41)

The reporting of political and technical debate about global climate change seems to be eroding public confidence in scientific consensus about the causes of global warming. The proportion of our survey participants who attribute global warming to greenhouse gas emissions has declined from three out of four respondents in 2006 to two out of three in 2010, and mean certainty levels have declined about 38 percent. Perceptions of risks to people and the environment posed by global warming and mean importance ratings for reducing greenhouse gas emissions remain above midscale, on average, but are logically differentiated by those who do and do not believe greenhouse gas emissions cause warming. While cap-and-trade is today an emerging policy issue about which many people have yet to form preferences, support appears to be conditioned by expected household costs. At no increase in household costs, support is slightly above midscale, but quickly turns to opposition as even nominal costs are incurred.

Chapter Three: Nuclear Dimensions of Energy Security

Q: How does the public assess risks and benefits of nuclear energy, and how is public support for or opposition to additional US nuclear generation capacities evolving? (pg. 49)

Among four specified risks of nuclear generation, the risk of terrorist attacks on US nuclear power plants consistently is rated highest. Among four specified benefits, reducing US dependence on foreign sources of energy consistently is rated highest. When asked to balance overall risks and benefits of nuclear energy, benefits are perceived, on average, to outweigh risks, and that judgment has remained consistent over the past eight years. Public support for additional nuclear generation capacities either at existing locations or at new sites is above midscale and increasing. Since 2002, mean support for adding reactors at existing sites has grown 10 percent, and mean support for constructing new nuclear power plants—while statistically significantly lower than support for adding reactors at existing sites—has increased 15 percent over the same period.

How do critical design elements, such as the number of sites, types of facilities, retrievability of materials, research facilities, and options for reprocessing relate to public preferences for managing spent nuclear fuel? (pg. 54)

While widely supportive of nuclear energy, most respondents generally remain uninformed or are misinformed about managing used nuclear fuel. Our surveys indicate no clear preference for a single concept for nuclear materials management and disposition, and latent support for multiple design concepts suggests that opinion has yet to mature. However, our data show that public receptivity to design and management options is influenced by specific facility attributes. Retaining the option for retrieval and reprocessing is favored by a two-to-one majority. Public receptivity also systematically increases when a base design is bundled with collocated research and/or reprocessing facilities. Host community compensation tends to increase policy support among those who are not initially opposed to siting the facility. Effects of proximity to repositories are not as simple as “not in my backyard” (NIMBY) assumptions might suggest. Though support generally wanes with closer proximity, significant fractions of participants

in our survey report *increased* support with closer proximity. It is reasonable to assume such support may reflect calculations of benefits such as jobs, economic growth, and the addition of skilled and well-educated workers. This finding is supported by research on the evolution of public views and support/opposition to the Waste Isolation Plant in New Mexico.

Q: What are the relative levels of public trust in technical information (such as risk assessments) provided by selected research, scientific, regulatory, and watchdog institutions in the United States, and what kinds of institutional biases do Americans perceive? (pg. 75)

Of seven institutions specified, the National Academy of Sciences is most trusted to provide unbiased technical information and risk assessments. Federal institutions such as the Nuclear Regulatory Commission and the Environmental Protection Agency are rated above midscale in trust and perceived to be relatively unbiased. National laboratories, state regulatory agencies, and the Nuclear Energy Institute are perceived as likely to downplay risks, while environmental groups such as the Natural Resources Defense Council and the Sierra Club are perceived as likely to exaggerate risks.

Chapter Four: Nuclear Security

Q: For what purposes do members of the public judge US nuclear weapons to be relevant today? (pg. 79)

In the views of most of our respondents, US nuclear weapons remain relevant today for deterring other countries from using nuclear or other weapons of mass destruction against US interests or those of our allies and for deterring other countries from providing nuclear weapons or nuclear materials to terrorist groups. Opinion is almost evenly divided about the importance of US nuclear weapons for preventing non-state terrorist groups from using weapons of mass destruction against us, with those perceiving utility basing assessments largely on deterring other states from making nuclear weapons or materials available to such groups. Most participants also value nuclear weapons for maintaining US influence, status, and military superiority. Almost two out of three participants believe that should war become unavoidable, US nuclear weapons could be important for “winning,” and

roughly three out of four respondents judge the benefits of US nuclear weapons to outweigh associated risks. These kinds of assessments suggest that the nuclear dimensions of security continue to be firmly ingrained in public understandings of overall national security.

Q: How are policy initiatives for nuclear arms control and reductions in the US nuclear arsenal viewed by ordinary Americans? (pg. 87)

About three out of four respondents want the new Strategic Arms Reductions Treaty with Russia to be ratified. Most participants also indicate strong support for a comprehensive nuclear test ban and a fissile material cutoff agreement, but that support is conditioned by ideology and partisanship, with those on the political left supporting nuclear arms control initiatives much more strongly than those on the political right. While the NPT continues to enjoy substantial support, opinion is roughly divided about complying with the provisions of Article VI requiring the US eventually to disarm. (We explore public attitudes on prospects for nuclear abolition in the following section.) When asked to indicate the minimum acceptable number of ready-to-use, long-range US nuclear weapons within a numerical range of 0–1,550, the modal grouped response in 2010 is 1,401–1,550; the median is 1,042; and the mean is 1,300. Most participants are open to reducing below 1,550 if Russia agrees to matching verifiable reductions. Substantial opposition is evident for unilateral reductions and reductions to very low numbers approaching zero.

Q: How do respondents view prospects for eventual nuclear abolition, and how does the public rate the importance of retaining US nuclear weapons today? (pg. 95)

Opinion is divided on whether a world without nuclear weapons would be safer or more dangerous, but a majority of respondents think it is desirable. However, opinion is much less divided about whether nuclear abolition is possible, with roughly eight in ten respondents judging it to be infeasible. The trend in agreement that it is desirable to eliminate all nuclear weapons is downward, with the mean decreasing about eight percent since 2005. The trend in mean judgments of the feasibility of nuclear abolition also is downward, having declined about 12 percent between 1993 and 2010. Mean rated importance of retaining US nuclear weapons increased nearly 14 percent during the same period. These trends suggest that while public support

for reducing the numbers of nuclear weapons is widespread (as reported in Section 4.2), completely eliminating all nuclear weapons is conceptually a different issue that does not enjoy similar levels of public support. Pursuit of nuclear-zero will require careful attention to persuading the American people that it can be done without harming US security.

Chapter Five: Security From Terrorism

Q: How have public views of the threat of terrorism evolved since 9/11? (pg. 101)

Mean public assessments of the overall threat of terrorism of all kinds in the US peaked immediately after 9/11 and have declined about 16 percent since 2001, but they remain well above pre-9/11 assessments. Public perceptions are predictably sensitive to recent events, and appear to respond even to attempted attacks that are not successful. Expectations are that the overall threat of terrorism in the US will increase in the future, especially the threat of suicide bombings. Terror threat assessments increase with age, political conservatism, and among women, and they decrease with education.

Q: How do Americans assess progress in the US struggle against terrorism to date, and what is the outlook for the future? (pg. 105)

The effectiveness of US efforts against terrorism are rated slightly above midscale, but about eight percent lower in 2010 than in 2003. Public confidence in eventually prevailing against terrorism is rated slightly below midscale in 2010 and about 13 percent lower than when first measured in 2003. Together, these trends suggest increasing public pessimism. Mean levels of confidence in US assessments of the threat of terrorism in the US or abroad mostly are below midscale. Mean confidence in US abilities to prevent large-scale and small-scale acts of terrorism also are rated near midscale or somewhat below, with confidence significantly higher for abilities to prevent larger attacks. Respondents exhibit clearly differentiated assessments of the effectiveness of US efforts to secure key points of entry, with improvements to US airport security being rated highest, followed by security at US seaports and harbors, and the security of US land borders being rated lowest. Mean public confidence in US abilities to respond to large-scale ter-

rorist attacks in the US is highest for the Department of Defense (but the trend is declining), followed by the Department of Homeland Security. Confidence in state and local agencies is lower, on average.

Q: How are public views of intrusive domestic measures to prevent terrorism evolving, and what key factors help shape those attitudes? (pg. 111)

On average, tolerances for the specified intrusive measures intended to reduce the threat of acts of terror within the US are near midscale, but have slowly increased over the past five years. Our respondents are more tolerant of restrictions that they think are likely to affect other people, such as restricting immigration and monitoring phone conversations among suspected terrorists. However, about 60 percent of participants support national identification cards. Less tolerance is evident for monitoring of their individual behaviors, or taking photos of them without their knowledge, or requiring that they provide DNA samples. Support for intrusive antiterror measures systematically increases with age, political conservativism, terror threat perceptions, and beliefs that too little emphasis currently is being given to security relative to liberty.

Chapter One

Introduction and Overview

This report presents findings from four surveys conducted in mid-2010: (a) an Internet survey on nuclear security and terrorism was collected May 17–18; (b) a subset of questions from that survey were administered by phone interviews for control purposes between May 9 and June 10; (c) an Internet survey on energy and environmental security was fielded June 8–9; and (d) a subset of questions from that survey were administered for control purposes by telephone between June1 and July 5. Each of the four surveys builds on comparative baselines established in 2005 (nuclear security and terrorism), 2006 (energy and environmental security), and continuing surveys in 2007, 2008, and 2009. We also build on prior foundational research conducted between 1993 and 2005.[1] Financial and institutional support for this study was provided by Sandia National Laboratories and the University of Oklahoma.

Section 1.1: Research Goals and Objectives

Research goals are organized along two research tracks involving four dimensions of security. All are designed to provide coordinated research and are intended to measure and analyze evolving public understandings of four interrelated dimensions of security: energy security, environmental security, nuclear security, and security from terrorism.

Energy and Environmental Security

Our primary research goals for this track are to analyze public views about contemporary energy security and associated environmental issues and to identify trends in public perceptions and preferences relevant to the evolution of related US policies. Specific research objectives include the following:

[1] For the baseline study on nuclear security and terrorism, see Herron and Jenkins-Smith 2006a; for the baseline study on energy and environmental security, see Jenkins-Smith and Herron 2007. Each is available on-line at: http://casr.ou.edu/nsp, as are all previous reports relating to this ongoing research project. Findings from previous surveys on related issues published between 1994 and 2004 are summarized in Herron and Jenkins-Smith 2006b.

- Employ a split survey design that employs an Internet data collection and a subset of questions applied in telephone interviews to meet two methodological objectives.
  - Where appropriate, map backward to selected baseline questions asked in previous surveys in this series for continued trend analyses and develop new questions intended for repeated application in future surveys.
  - Compare responses from a self-administered Internet survey with a subset of companion questions collected by telephone interviews to monitor the evolving comparability of Internet and telephone survey methods.
- Identify and analyze public perceptions of US energy security, to include: (a) energy supply and reliability; (b) energy vulnerabilities and threats; (c) relative risks and benefits of fossil fuels, nuclear energy, and renewable sources; and (d) relationships among security, costs, energy dependence, and alternative sources.
- Investigate environmental issues as they relate to energy security, to include expected implications of global climate change, support for energy research and development, reducing greenhouse gas emissions, and relationships among environmental issues and potential policy options.
- Analyze emerging changes and trends in public views on nuclear energy, to include risks, benefits, policy preferences, research and investment priorities, and public trust.
- Investigate understandings and preferences regarding nuclear materials management and fuel cycle issues. Specifically investigate how the following design variables affect public support for managing used nuclear fuels: (a) number of sites; (b) types of facilities, including storage depths; (c) retrievability of materials; (d) collocation of research facilities; and (e) options for reprocessing.
- Analyze belief systems among members of the US general public and their relationships to views on energy and environmental security.

Nuclear Security and Terrorism

For this track, our primary research goals are to analyze public views about the evolving nature of nuclear security and terrorism and to identify trends in public perceptions and preferences relevant to the evolution of related US security policies. Specific research objectives include the following:

- Employ a split survey design that employs an Internet data collection and a subset of questions applied in telephone interviews to meet two methodological objectives.
  - Where appropriate, map backward to selected baseline questions asked in previous surveys in this series for continued trend analyses and develop new questions intended for repeated application in future surveys.
  - Compare responses from a self-administered Internet survey with a subset of companion questions collected by telephone interviews to monitor the evolving comparability of Internet and telephone survey methods.
- Identify emerging trends in public perceptions of US nuclear weapons policies and selected national and international security issues. Examine evolving US public assessments of risks, benefits, policy preferences, and research and investment priorities associated with nuclear weapons and strategic security.
- Identify and analyze trends in public concerns about homeland security, including public assessments of the threat of terrorism and US policies to prevent and respond to terrorism.
- Investigate concepts of multidimensional security, to include public understandings of how security and liberty should be balanced and under what conditions threats to national security warrant varying levels of public sacrifice.
- Analyze belief systems among members of the US general public and their relationships to views on nuclear security and terrorism.

Section 1.2: Conceptual and Methodological Considerations

Popular Polling vs. Opinion Survey Research

There are important conceptual and methodological differences between polling done to support such venues as advertising, mass media, and political campaigning—which we term popular polling—and academic quality opinion survey research done to advance general knowledge and inform policy processes.

Popular polling usually prioritizes responsiveness, which is enhanced by shorter, simpler designs using questions whose responses are categorical: yes–no; for–against; support–oppose. These kinds of response categories simplify analysis and make it easier to report poll results. Because such polls represent snapshots in time, findings usually are considered highly perishable, and the emphasis is on reporting results quickly and in simple formats that lend themselves to easy interpretation. Replication of findings usually is not of great concern, since competing polls tend to provide support or challenge results. The objectives usually are to address "what," "who," "when," and "where." Such polls are ill-suited for understanding "how" or "why." They are well suited for application via any form of data collection, including wireless phones. The objective is a snapshot in time of findings that can be reported simply and quickly.

Academic quality opinion survey research prioritizes quantitative analysis, reliability, and replicability. Question formats more often use continuous scales that support relational analytical techniques providing statistical inference. This kind of investigation is better suited to complex issues that are not easily reduced to categorical preferences. Such surveys typically employ longer and more complex question wordings, allow more subtle response variations (often including verbatim responses in the participant's own words), and can require much more attention and thought from respondents than do many popular polls. These kinds of surveys are better suited to exploring complex issues of public policy that require addressing the "how" and "why" of policy preferences, and the findings they yield are less perishable. Such surveys are not well suited to data collection via wireless phones because of their length and complexity.

This project employs academic quality opinion survey research methods to yield data that can help explain not only which policy options are preferred, but how and why policy preferences are formed and evolve over time. We not only seek to understand policy preferences at a given point in time, we also attempt to better understand belief structures that underlie opinion formation and maintenance. To do that, we design all phases of this ongoing research project to support multidimensional analyses, including quantitative methods such as descriptive, relational, and trend analyses.

Trends in Survey Collection Methods

In terms of operational methodologies, there are two major trends in opinion survey research that seem especially relevant to our long-term goals in this project. First, the representativeness of and access to mass publics in the developed world via wired telephony is declining as more households take advantage of wireless communications and depend less on wired landlines. The number of US households with wired phone connections is declining even while our population continues to grow. The second trend is growing access to the Internet. The downward trend in public accessibility via wired phones and the upward trend in public accessibility via the Internet will cross (or have crossed), creating growing opportunities for Internet surveys and declining opportunities for surveys of wired phone users. Because of factors noted below, applying lengthy, complex surveys by wireless telephony presents many hurdles. This means that even as cell phones become ubiquitous, conducting these types of complex surveys by phone is becoming increasingly difficult and impractical, while their application by Internet is becoming increasingly more functional. To help bridge this transitional period in telecommunications, mixed survey methods can provide effective cross coverage.

In 2005, 2006, 2007 and 2008, we employed split survey designs providing complete parallel Internet and telephone surveys for comparing collection methods. In 2009, Internet-only surveys were administered. In 2010, subsets of questions from the nuclear security and terrorism Internet survey and the energy and environmental security Internet survey were collected in two separate telephone surveys for control purposes. As noted in previous reports in this series, the central tendencies among Internet and phone responses to some survey questions are statistically significantly different at the 95 percent confidence level (partly a function of large sample sizes). But after weighting for demographic representativeness, we have we found few substantive differences in aggregate responses between collection modes, and none that are directionally different or of sufficient nominal size to be policy relevant.

However, continuing developments in demographic and communication trends suggest that phone survey collections increasingly are varying from cross-sectional demographic patterns in the US—especially regarding respondent ages and socio-economic indices. This largely is because of the declining numbers of households with wired phone services and the substantial difficulties in sampling the population of wireless-only phone users.

As increasing numbers of Americans shift to wireless-only phone services, differences between potential respondents who can be reached by wired phone vs. those who can be reached by wireless-only services are growing. The latest available data from the National Center for Health Statistics regarding demographic differences between adults in the US who have access to wired vs. wireless phone services include the following distinctions (Blumberg and Luke 2010).

- About one of every four American homes (24.5%) has only wireless phone service, and about 52 million adults (22.9%) reside in those households. Additionally, one of every seven American homes (14.9%) has a landline, but receives all or almost all calls on wireless phones.

- About 37.8% of US adults between the ages of 18 and 24 and nearly half (48.6%) of adults between the ages of 25 and 29 have only wireless phone services. At the other end of the age range, only 5.2% of individuals aged 65 and over have wireless-only services.

- The percentage of wireless-only and wireless-mostly adults in every age category is increasing, meaning that the proportion of the national population that can be interviewed by landline only is declining across all demographic categories. But because wireless technologies are being adapted by different demographic groups at different rates, the portion of the population that can be interviewed by landline is becoming less demographically representative each year.

- More than three in five adults living with unrelated adult roommates (62.9%) live in households having only wireless phone services, and those who rent are more likely to have only wireless services (43.1%) than those who own homes (14.0%).

- Men (24.5%) are more likely than women (21.3%) to have only wireless service. Adults living in the South (25.4%), Midwest (25.6%), and West (22.2%) are more likely than adults living the Northeast (15.1%) to have wireless-only services. And Hispanic adults (30.4%) are more likely to have wireless-only services than are non-Hispanic white adults (21.0%) or non-Hispanic black adults (25.0%).

- Adults living in poverty (36.3%) or near poverty (29.0%) are more likely than higher income adults (19.6%) to be residing in household having only wireless phones.

- Approximately 2.0% (nearly four million adults) have no telephone service of any type, and thus cannot be surveyed by phone.

Given the length and complexity of our surveys (averaging 25 minutes or more), interviewing via cellular phones is impractical because of costs, safety, and other location issues (Brick, et al. 2007). Interviewing respondents while they are at work also is impractical for similar reasons. This means that when collected by phone, our types of in-depth inquiries are limited to respondents having home access to wired telephony. Given the trends in telecommunication patterns and differences in important demographic dimensions, phone collections are becoming increasingly less demographically representative.[2]

At the same time that wired telephony is declining, access to Internet services continues to grow. Between 1995 and 1997, the proportion of adults having access to online services tripled from nine percent to 30 percent. By 2000, it had more than doubled again to 63 percent. Though the rate of growth in Internet access has slowed, it was 73 percent by 2004, 81 percent in October 2008, and remained at about the same level (80%) in 2009 (HarrisInteractive 2009). Only about two percent of computer users do not go online (HarrisInteractive 2008). The number of adults who have access to the Internet from home increased to 76% in 2009 (HarrisInteractive 2009), and two out of three adults (66%) in the US access the Internet via broadband connections at home (Smith 2010). Not surprisingly, with increased access, the demographics of the online population are becoming more representative of the US population as a whole. Internet use among those over 65 years of age, those who have not attended college, and those having annual household incomes of less than $25,000 continue to be somewhat underrepresented, but large majorities of even these demographic categories now have access to the Internet (HarrisInteractive 2008). Broadband adoption continues to expand—but unevenly. While income and education are positively associated with broadband Internet use, patterns also are differentiated by race and geographic location. White households have higher access rates that Hispanic and African American households, and urban residents are more likely to acquire broadband access than are rural households, even after accounting for socio-economic differences (U.S. Department of Commerce 2010).

[2] Blumberg and Luke (2010) also note important behavioral differences relating to health issues (binge drinking, health status, insurance coverage, access to health care, and certain other access and behavior issues) between those having wireless-only services vs. those with wired phones or combinations of wired and wireless services.

While we intend periodically to collect subsets of our Internet surveys by phone in future cycles (for control purposes), our previous comparative findings, combined with the trends noted above, suggest that the phone comparisons have declining utility unless extensive weighting is used to correct for growing imbalances in demographic representativeness. Because Internet surveys can be conducted to control for demographic and regional representativeness (reflecting national population data), weighting is not required for carefully executed Internet surveys. As our findings show, central tendencies suggest a high degree of continuity in response patterns, and a high level of confidence in comparisons with previous surveys seems warranted.[3] Collection methods and demographic representativeness are further described in Appendix 1.

Conceptualizing Multiple Dimensions of Security

The term "security" is associated with contextual meanings that are so broad and variable that some scholars consider it to be an "essentially contested concept" (Buzan 1991, Freedman 1992, Gallie 1962, Rothschild 1995). Like other complex ideas such as power, justice, peace, and freedom, the concept of security includes an ideological dimension that reduces the utility of empiricism for resolving differences in definitional and conceptual explanations (Buzan 1991; Little 1981). Even those who specialize in security studies cannot agree on the boundaries of the concept or of the field of study. To some who take a more classically narrow approach, security relates to matters of the state and its military capabilities—particularly the use of force (Buzan, Waever, and de Wilde 1998). But since the end of the Cold War, the concept of security has broadened to include conventions associated with many aspects of globalization and humanitarian concerns, such as hunger, health, human rights, economics and trade, global climate change, and international system stability (Fierke 2007). Some, such as Buzan (1991) and Fierke (2007) caution that the proliferating conceptual application of the term "security" to new fields and new concerns may locate agency in states rather than in institutional or individual actors in specific fields, and some issues may become militarized even though a political solution may be more appropriate.

[3] Throughout this report, graphics show combined phone and Internet results where applicable.

While a detailed examination of the concept of security is beyond the scope of this brief discussion, it is useful note a few key points. Essentially, perceived security is about *feeling* safe from harm or danger, and actual security is about *being* safe. When measuring and analyzing public opinion, we are dealing with perceptions and beliefs, and thus at the individual level of analysis, security is a *feeling* that is inherently subjective to individual contexts and beliefs. At a social level, security is a normative political construct. It is assessed by governmental agencies and political leaders, and it is partially a function of policy processes. While some empiricism may be applied, there remain large areas of subjective interpretation of public security that become the bases for official judgments and policies. These areas of subjectivity are the focus of intense public debate in which the views of experts and those of the general public must be considered by policy makers.

One of the most critical aspects of defining and understanding the meaning of security is to recognize that it is heavily dependent on risk or threat. Theoretically, in the absence of some real or imagined risk or threat, security would be maximized, but actually, under such a theoretical construct (which is not realistically plausible), security would have no meaning at all. Edkins (2003) contends that the human desire for perfect security from all threats to our existence is illusory, and some degree of insecurity is inherent to all life—including human existence. Fierke (2007, 8) argues that: "The search for perfect security is not merely illusory, but becomes part and parcel of the problem, that is, it contributes to the production of insecurity and the construction of threats."

If it is the imagined and real sources of risks and threats that give the concept of security meaning, it follows that one of the most useful ways of conceiving security is in relation to perceived and actual risks and threats. Following the insightful conceptualization of security by Arnold Wolfers (1952), perhaps security can be best understood as the inverse of risk/threat. Because there are some risks and threats over which no individual or government has control (such as the threat of eventual death), comprehensive and enduring security is impossible. Because the meaning of security derives from the absence of risk/threat, and because it is impossible to prove why something did *not* occur, attributing the sources and causes of security is problematic. We may presume the reasons a threatening event, such as nuclear war involving two or more states having nuclear weapons, has yet to occur relate to deterrence based on mutually assured destruction, but we cannot know that is the sole or even primary reason. Simi-

larly, we cannot know with certainty why large-scale acts of terrorism have not occurred in the United States from September 11, 2001 to the time of this writing. We can make assumptions about the effectiveness of preventive measures and about terrorist capabilities and motivations, but we cannot *prove* why another act of the scale of 9/11 has not yet occurred. From this line of reasoning, we conclude that the concept of security is based on individual feelings and political assumptions and assessments of risks and threats. This becomes key when considering how to measure and track security.

Because of the essentially contested nature of the concept of security, because our understanding of it is based on assumptions about risks and threats, and because of the growing application of the concept of security to more fields and policy domains, we need to carefully delineate those dimensions being studied in this project. As previously noted, we are limiting our investigation and analysis to public understandings of four interrelated dimensions of security.

- Energy security includes energy dependence, adequacy of energy sources and supplies, threats and vulnerabilities to energy access, nuclear energy risks and benefits, nuclear materials management and disposition, alternative energy sources, and research and development into future energy requirements and options, including willingness to pay for energy research and development.

- Another dimension of security is the growing importance of environmental issues as they relate to traditional concepts of physical security, economic security, and energy management. Of particular interest in this dimension is global climate change (another contested concept) and how public assessments of its dynamics are evolving.

- Nuclear security encompasses nuclear weapons and their development, management, modernization, and uses; nuclear materials and their production, applications, and safeguards; nuclear proliferation and associated implications; and public perceptions of and support for policies relating to each of these aspects of nuclear security.

- Terrorism and its implications for all levels of security includes public understandings of the various threats posed by terrorism, assessments of ongoing efforts to prevent and combat terrorism, and the effects of terrorism on key societal values such as freedom and civil liberties.

Interrelationships

We consider these four dimensions of security to be closely related and interactive, and one of our long-term goals is to better understand how members of the US public relate concepts and beliefs associated with multiple dimensions of security. Given the baselines established in each of our two research tracks investigating four dimensions of security, we are now able both to probe more deeply into their perceived connectedness and to monitor trends in relative public views. Some areas seem obviously to be closely related, such as nuclear weapons and the potential for their use in terrorism. Others may be somewhat less clear, such as the relationships among energy independence, fossil fuels, and global warming. Still others are much more subtle, such as the relationships of porous borders and illegal immigration with security from terrorism and with the social and economic implications of the associated labor pool. Through repeated and refined measurements, we pursue more detailed examination of how Americans relate these four dimensions, the degree to which they see crosscutting security implications, and how long-term trends evolve.

Section 1.3: Organization of the Report

Chapter Two analyzes multiple dimensions of energy and environmental security by addressing the following inquiries:

- How are key public perceptions and beliefs shaping the context for debate about a comprehensive national energy policy?
- What comparative levels of importance do Americans assign to prospective energy technologies, and how are priorities differentiated by demographics and partisan subgroups?
- How are views on global climate change evolving, and how do they relate to support for prospective cap-and-trade policies?

Chapter Three investigates issues associated with the nuclear dimensions of energy security by addressing the following analytical inquiries.

- How does the public assess risks and benefits of nuclear energy, and how is public support for or opposition to additional US nuclear generation capacities evolving?

- How do critical design elements, such as the number of sites, types of facilities, retrievability of materials, research facilities, and options for reprocessing relate to public preferences for managing spent nuclear fuel?

- What are the relative levels of public trust in technical information (such as risk assessments) provided by selected research, scientific, regulatory, and watchdog institutions in the United States, and what kinds of institutional biases do Americans perceive?

Chapter Four analyzes issues relating to nuclear security by addressing the following three inquiries:

- For what purposes do members of the public judge US nuclear weapons to be relevant today?

- How are policy initiatives for nuclear arms control and reductions in the US nuclear arsenal viewed by ordinary Americans?

- How do respondents view prospects for eventual nuclear abolition, and how does the public rate the importance of retaining US nuclear weapons today?

In Chapter Five, we focus on security from terrorism by addressing the following questions:

- How have public views of the threat of terrorism evolved since 9/11?

- How do Americans assess progress in the US struggle against terrorism to date, and what is the outlook for the future?

- How are public views of intrusive domestic measures to prevent terrorism evolving, and what key factors help shape those attitudes?

Appendix One describes sampling, data collection, and associated research methods. We also provide illustrations of the demographic representativeness of respondents compared to US national population parameters.

Because there are many more survey questions than can be discussed in this report, we provide two appendices listing all the questions contained in our latest surveys. In Appendix Two, we provide a comprehensive listing of ques-

tions asked in the Internet and phone surveys in 2010 on energy and environmental security. Response frequencies and central tendencies are displayed.

Appendix Three provides a comprehensive listing of questions asked in 2010 in our Internet and phone surveys on nuclear security and terrorism. Here too, we describe distributions of responses and central tendencies.

Chapter Two

Energy and Environmental Security

We report public views on energy and environmental security in 2010 in two related chapters. In this chapter, we address public perceptions and beliefs about comparative sources of energy and concerns about global climate change that are helping to shape broad contours of energy and environmental policy debate. In the companion chapter that follows, we narrow our focus to examine more closely the nuclear dimensions of energy security and materials management that may figure importantly in the evolution of a comprehensive national energy strategy. We begin our discussion by addressing the following three analytical questions:

- How are key public perceptions and beliefs shaping the context for debate about a comprehensive national energy policy?
- What comparative levels of importance do Americans assign to prospective energy technologies, and how are priorities differentiated by demographics and partisan subgroups?
- How are views on global climate change evolving, and how do they relate to support for prospective cap-and-trade policies?

Section 2.1: Public Context for Energy Debate

To explore selected public sensibilities that may help set the context for debate about a comprehensive national energy policy, we investigate the following: (a) trends in public concerns about energy relative to other key issue areas; (b) satisfaction with current energy policies and confidence in meeting future energy needs; (c) comparative perceptions of risks associated with different categories of energy; (d) assessments of the importance of reducing US dependence on foreign energy sources; (e) preferences for balancing energy conservation and development; and (f) attitudes about further developing and exploiting fossil fuel sources.

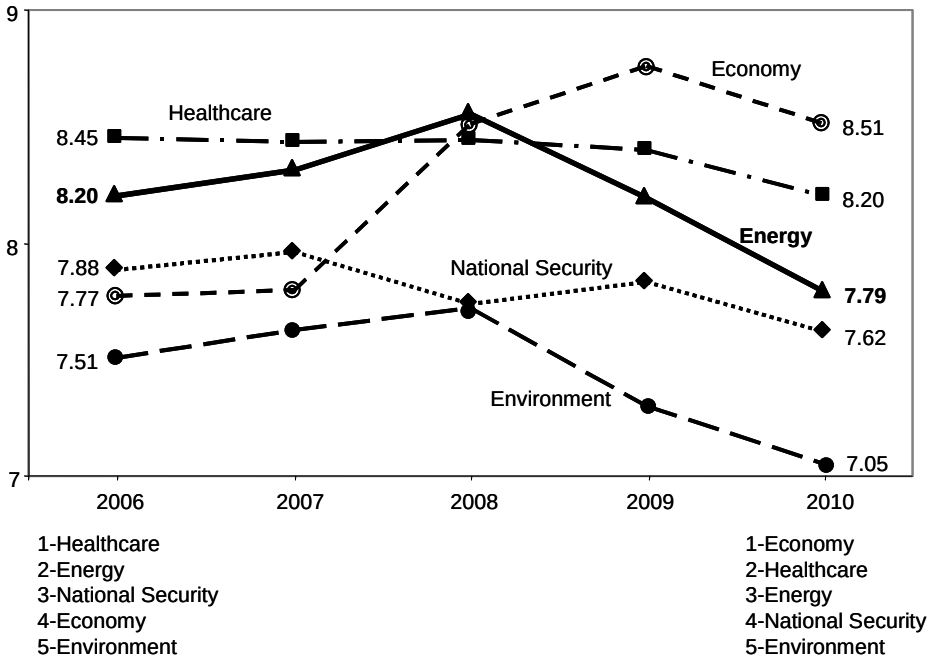
Trends in Relative Issue Concerns

Since 2006 we have tracked annually public concerns about five major issue areas by asking respondents to rate their concerns on a scale from zero (not at all concerned) to ten (extremely concerned) about each of the following: (random order)

- E4: Threats to national security, including terrorism
- E5: The delivery and cost of healthcare in the US
- E6: The availability and cost of energy in the US
- E7: The effects of human activities on the environment
- E8: The state of the economy, including jobs and inflation

Figure 2.1 compares trends in mean concerns for each.

Figure 2.1: Trends in Mean Issue Concerns
(0 = Not At All Concerned—10 = Extremely Concerned



Note that the vertical axis has been truncated to allow better definition among points having similar values. This exaggerates the appearance of perturbations over time, so it is useful to note that all values for each issue fall within a relatively narrow range of seven to nine on a scale from zero to ten. In terms of relative concerns, energy consistently is ranked among the top three, but has declined in priority since the oil crisis in 2008 when it was the top rated concern. After retail gasoline prices stabilized, and as the economy and healthcare rose to the top of the national agenda, mean public concerns about energy have declined somewhat, but remain high in absolute terms.

Satisfaction with Current Policies and Confidence in Energy Future

To help gage public satisfaction with current energy policies and confidence in the future availability of energy supplies, we pose the following two questions whose mean responses are charted in Figures 2.2 and 2.3.

- E10: As you may know, US energy policies generally deal with such issues as the sources and adequacy of energy supplies, the costs of various types of energy, and the environmental implications of using energy. Using a scale from zero to ten, where zero means *not at all satisfied* and ten means *completely satisfied*, how satisfied are you with current US energy policies overall?

- E9: Using a scale from zero to ten, where zero means you are *not at all confident* and ten means you are *completely confident*, how confident are you that there will be adequate sources of energy to meet the energy needs of the US during the next 20 years? Please think about US energy needs overall, including transportation, heating, electricity, and other energy requirements when considering your answer.

Figure 2.2: Mean Satisfaction with Current US Energy Policies Overall

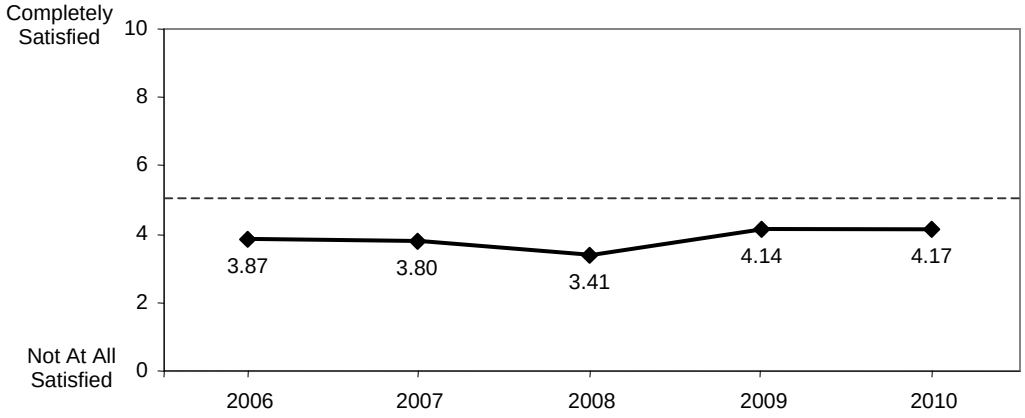
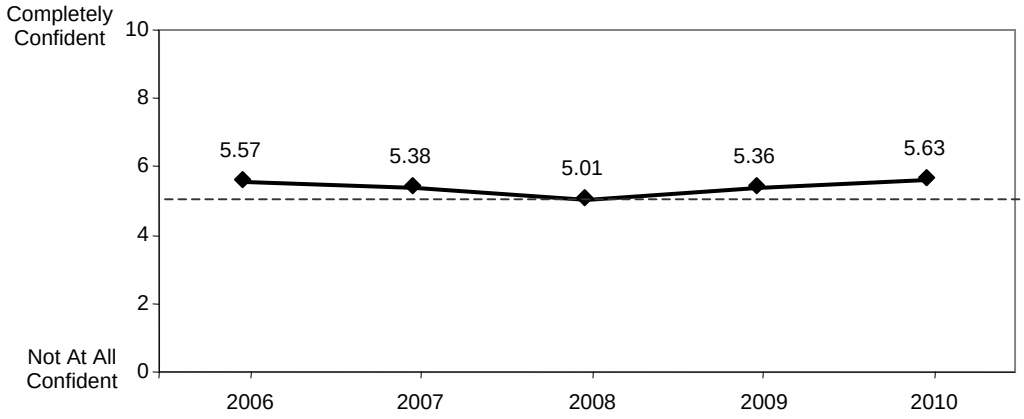


Figure 2.3: Mean Confidence in Adequate Sources of Energy



While most participants report mean levels of satisfaction with current US energy policies that are below midscale, mean confidence in adequate sources of energy to meet future needs is optimistically above midscale and trending upward since 2008.

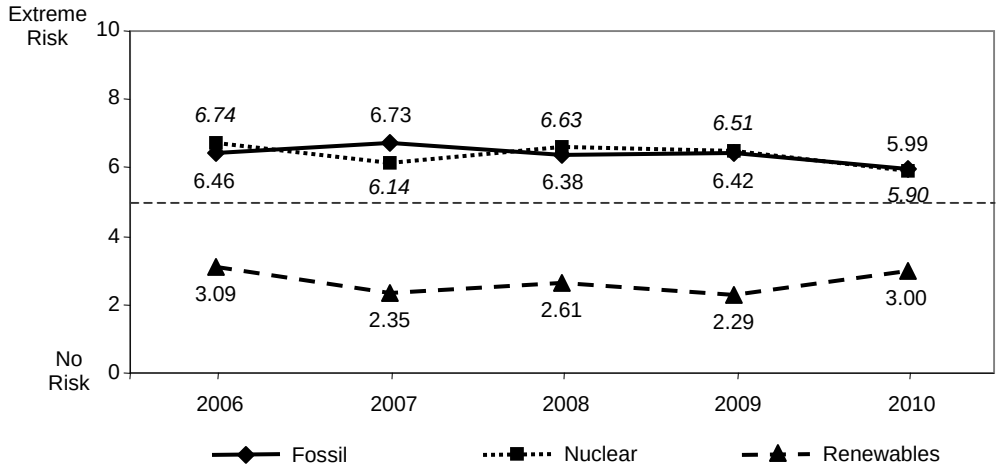
Perceptions of Domestic and Foreign Energy Risks

We ask the following series of questions to compare perceptions of domestic risks associated with three broad energy sources: fossil fuels, nuclear power plants, and renewable sources.

> *Lead-in*: The next set of questions concerns all kinds and uses of energy, including electricity for homes and businesses; gas, oil, and coal for heating; and transportation fuels, such as gasoline and diesel. Considering the effects of both normal operations and potential accidents, how do you rate the risks to society and the environment from each of the following sources of energy using a scale from zero to ten, where zero means *no risk* and ten means *extreme risk*. (random order)
>
> - E35: Risks from fossil fuels, such as coal, oil, and natural gas
> - E36: Risks from nuclear power plants
> - E37: Risks from renewable sources of energy, such as from hydroelectric dams, solar power, and wind generation

We compare trends in mean assessments in Figure 2.4.

Figure 2.4: Comparing Trends in Mean Energy Risk Assessments

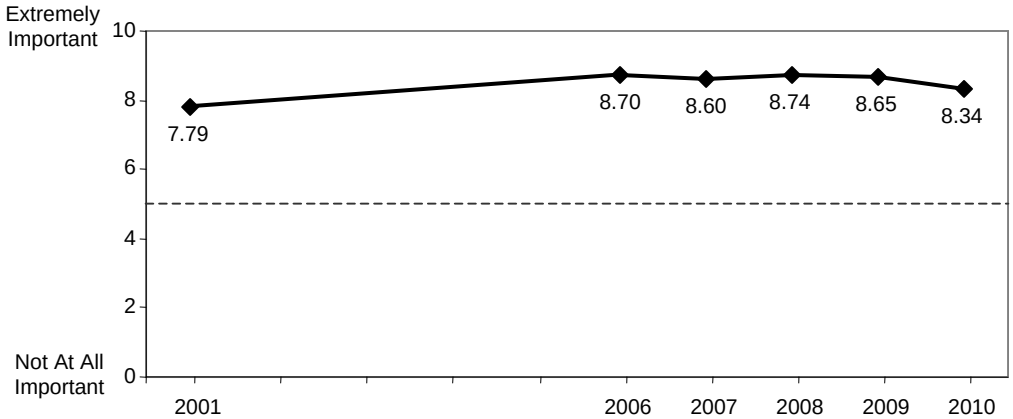


Note that perceptions of risks associated with nuclear generation are now equated with risks from burning fossil fuels. Renewable sources are judged to pose significantly lower risks.

Of course dependence on foreign sources of energy represents another category of energy risks that largely are external. In Figure 2.5, we chart the trend in mean responses to the following question about the importance of reducing US dependence on energy from foreign sources.

> E42: Using a scale from zero to ten, where zero means *not at all important* and ten means *extremely important*, how important is it to reduce US dependence on foreign sources of energy of all types?

Figure 2.5: Mean Importance of Reducing US Dependence on Foreign Energy
(question not asked in years between 2001 and 2006)



Since our first measure in 2001, the mean importance of reducing dependence on foreign sources of energy has increased more than 11 percent, and is consistently rated high in absolute terms.

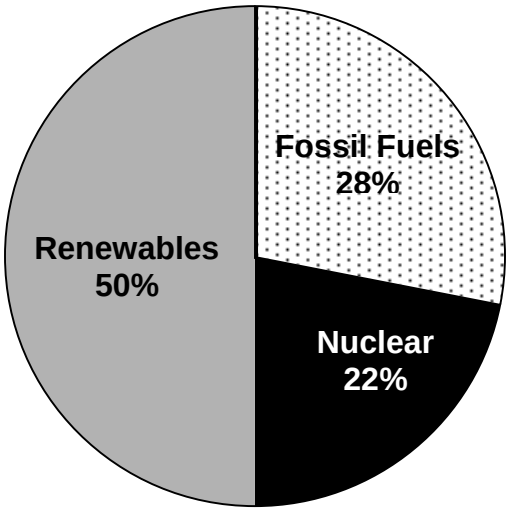
Preferred Energy Future

To gage preferences for how respondents prefer to see the current energy mix evolve in coming decades, we inform them of the current energy mix, ask them how they would like to see it change, inquire about how they think conservation and development ought to be balanced, and how they feel about further developing US oil and gas deposits—including further offshore drilling.

We begin with the following informative lead-in, followed by three questions allowing respondents to indicate how they would like to see the energy mix change.

> *Lead-in*: Now think about the overall mix of energy sources for the US. We currently get about 85 percent of our total energy from fossil fuels, eight percent from nuclear energy, and six percent from renewable sources. The following three questions concern how you would like to see this mix of energy sources change over the next 20 years. Please indicate approximately what percentage of the total US energy supply you would like to see come from each of these three energy sources. (random order)
>
> - E43: What percent of our energy should come from fossil fuels, which currently provide about 85 percent of our energy?
> - E44: What percent of our energy should come from nuclear energy, which currently provides about eight percent of our energy?
> - E45: What percent of our energy should come from renewable sources, which currently provide about six percent of our energy?

Figure 2.6: Idealized Future Energy Mix (Mean Preferences by the Year 2030)



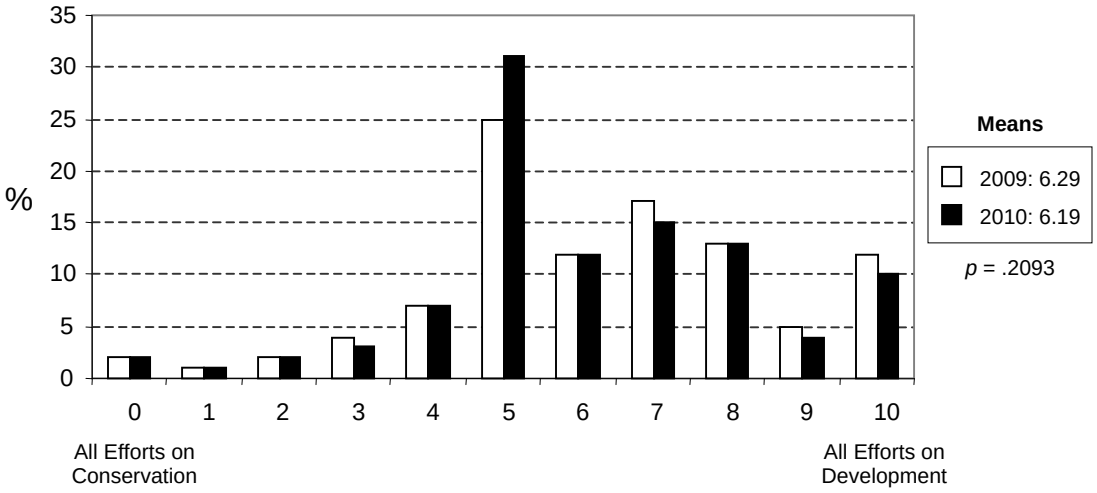
Though we did not ask respondents to consider technological limitations or costs of conversion, production, or distribution, the idealized balance averages to about 50 percent from renewables, about 28 percent from fossil sources, and the remaining 22 percent from nuclear generation. Even in the absence of realistic limitations and cost considerations, these notional proportions are informative for insight into public acceptance of and resistance to potential policies for shaping the future energy mix.

Of course debate about a secure energy future also must include considerations of how to balance energy conservation with development, as well as evolving attitudes about the future roles of oil and gas, which heavily influence the transportation sector. In 2009 and 2010 we probed preferences for how to balance efforts toward conservation and development by presenting the following brief arguments in random order, followed by a question asking participants to assign relative emphasis on each. We chart responses in Figure 2.7.

> Some people argue that regardless of the future mix of energy sources, we must also significantly reduce energy consumption.
>
> Some people think that significantly reducing energy consumption limits economic growth and is not practical.

- E46: Considering both arguments and using the slider scale below, where zero means *place all efforts on reducing energy consumption* and ten *means place all efforts on developing the energy mix you identified above*, what strategy would you prefer? Notice that as you move the slider to each scale number, the resulting balance is displayed.

Figure 2.7: Balancing Energy Conservation and Development



In 2010, about one-third of respondents preferred an equal balance of conservation and development efforts, while a majority (54 percent) favored development over conservation. Only about 16 percent preferred to emphasize conservation over development. While some differences in distribution patterns for 2009 and 2010 are apparent, means are statistically indistinguishable.[1]

Probing development preferences, we ask the following question about further developing US oil and gas deposits. We begin by presenting brief opposing arguments in random order and then asking the subsequent question.

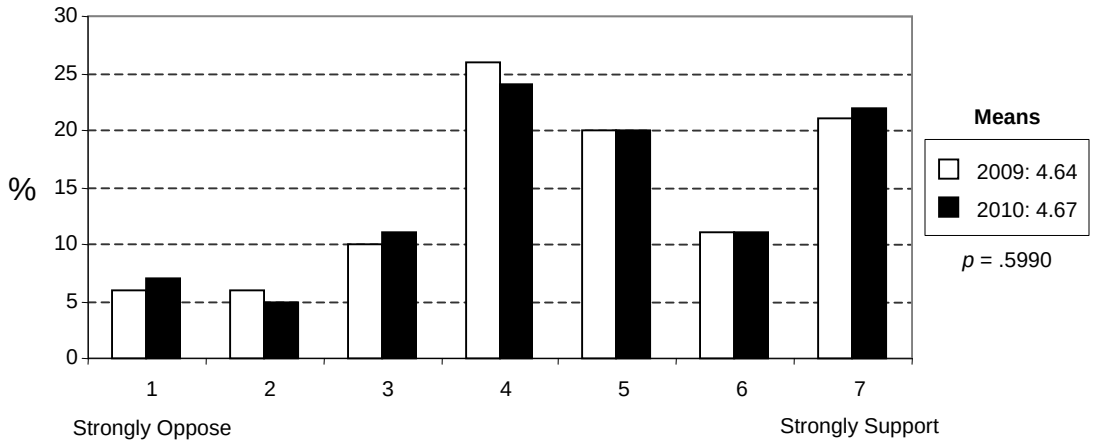
[1] Throughout this study, we report the results of analyses of variance (ANOVAs) in terms of *p*-value, which is a measure of the probability that differences in means would have occurred by chance. In this report, statistical significance is attributed to those differences that would have occurred by chance fewer than five times in 100 (equivalent to a 95 percent confidence level). However, statistical significance does not always equate to policy relevance. The importance of statistically significant differences in means must be judged in the context of the variables being measured and the groups or samples being compared.

Some people *oppose* further developing US deposits of oil and gas. They argue that doing so increases greenhouse gas emissions, harms the environment, and reduces the economic incentives for developing alternative sources of energy that are cleaner.

Some people *support* further developing US deposits of oil and gas. They argue that doing so keeps energy prices lower, reduces dependence on foreign sources, and gains time for developing alternative sources of energy that are cleaner.

- E47: Considering both arguments and using a scale from one to seven where one means *strongly oppose* and seven means *strongly support*, how do you feel about further exploring and developing US deposits of oil and gas?

Figure 2.8: Further Developing US Oil and Gas Deposits



A 53 percent majority of participants in 2010 indicate support for further developing US oil and gas reserves, while 23 percent oppose, and 24 percent are undecided. Distributions and means in 2010 are similar to those reported in the prior year.

On April 20, 2010, the Deep Water Horizon drilling rig exploded creating the world's largest oil spill in the Gulf of Mexico. To determine how public attitudes about offshore drilling might be affected, we presented the following randomly ordered arguments for and against further off-shore drilling and asked the related question about seven weeks after the explosion and during the height of oil spill recovery and cleanup operations.

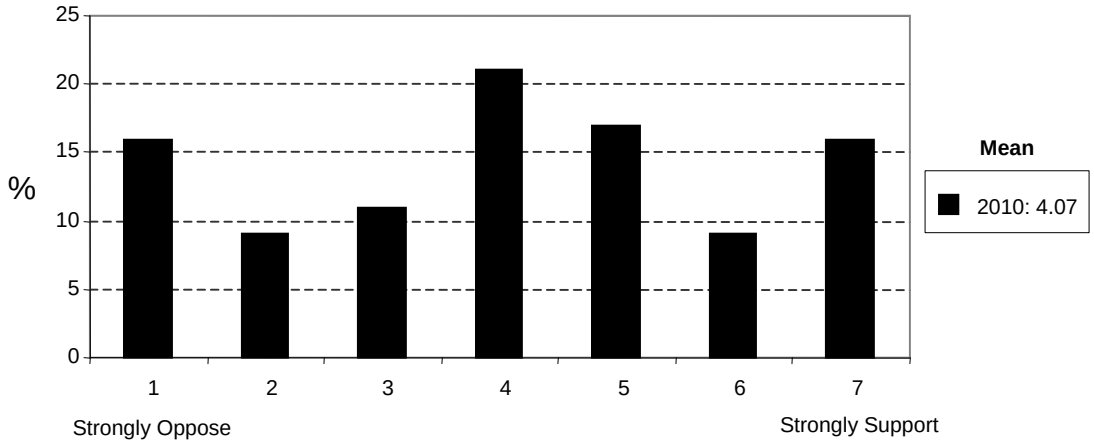
Lead-in: The recent oil spill in the Gulf of Mexico raises concerns about off-shore drilling near the US coastline.

Opponents of off-shore drilling argue that potential damages to the environment and the US economy mean that we should not allow additional off-shore oil and gas drilling near the US. They say that enhanced safety measures and government regulations will not eliminate dangers, and buying oil from other countries is better than risking environmental and economic damages.

Supporters of off-shore drilling argue that much of remaining US oil and gas deposits exists near our shores, and we must continue drilling in those areas to reduce dependence on oil from other countries. They say that additional safety measures and more effective regulations can reduce the risks of off-shore drilling and that US security requires reducing our dependence on foreign oil.

- E47a: On a scale from one to seven where one means *strongly oppose* and seven means *strongly support*, how do you feel about drilling additional oil and gas wells off-shore near the US coastline?

Figure 2.9: Drilling Additional US Offshore Oil and Gas Wells



Even in the immediate aftermath of the Gulf oil spill, a plurality of 42 percent of respondents support further off-shore drilling, 36 percent oppose, and 21 percent are undecided.

Short Answer

Q: How are key public perceptions and beliefs shaping the context for debate about a comprehensive national energy policy?

The economy, healthcare, and energy are among the top public concerns in 2010. Since 2008, public confidence in the adequacy of future energy supplies has increased significantly to slightly above midscale, but mean satisfaction with US energy policies overall remains below midscale. Risks of burning fossil fuels for generating electricity now are considered commensurate with risks of nuclear generation. Renewable energy sources are perceived to pose significantly lower risks than fossil or nuclear sources. Most respondents support a mix of conservation and development of energy resources, with priority given to development of new sources. Participants report a preference for moving toward an energy mix of about 50 percent renewables, about 28 percent fossil fuels, and about 22 percent nuclear energy by 2030. Only 23 percent of respondents oppose further exploring and developing US deposits of oil and gas, and even after the Gulf oil spill, only 36 percent oppose drilling additional off-shore wells.

Section 2.2: Energy Research Priorities

We also investigate public sensibilities about existing and prospective energy resources for the future by comparing relative priorities for research and development among the following ten categories of energy technologies.

Lead-in: There are never enough research and development funds for all worthy energy projects, so difficult choices have to be made. Following is a list of ten areas in which investments might produce energy benefits. Please rate the importance of each energy technology on a scale from zero to ten where zero means *not at all important* and ten means *extremely important.*
(random order)

- E48: Clean coal technologies to reduce or eliminate emissions of greenhouse gases when coal is burned
- E49: Nuclear generation technologies to increase the efficiencies of nuclear energy generation while reducing associated risks

- E50: Biomass fuels technologies to increase the efficiencies of growing and burning biomass materials (such as plant matter) for energy
- E51: Wind generation technologies to increase the efficiencies of generating electricity from the wind
- E52: Solar generation technologies to increase the efficiencies of generating electricity from the sun
- E53: Hydro generation technologies to increase the efficiencies of generating electricity from the movement of water
- E54: Geothermal technologies to increase the efficiencies of using energy naturally generated by the earth's core
- E55: Oil and gas exploration technologies to increase the efficiencies of finding and extracting our own oil and gas deposits
- E56: Fuel cell technologies to produce energy from chemical reactions of various elements such as hydrogen or other gases
- E57: Electrical distribution technologies to increase the efficiencies of transmitting and distributing electricity

To force priority rankings among potential ratings of importance that might be similar, we next ask participants to assign a priority rating for investments in research and development for each technology area using the following instruction.

> Now that you have rated the importance of each of these energy technologies, we need you to rank them from highest to lowest priority for research and development funding. Please use the drop-down boxes to assign a priority number from 10 (highest priority) to 1 (lowest priority) indicating the priority you think each energy technology should receive for research and development funding. You can use a priority number only once, and you must assign a priority number for each listing before you can advance to the next page. Please consider the entire list before beginning to rank priorities.

The two inquiries are slightly different in that the first asks for assessments of importance, while the second asks for priority of research and development investments. Subtle differences can be discerned in grouped responses that reflect differentiated assessments of overall importance as an energy technology and priority for further research and development (R&D).

Table 2.1 shows mean rankings of the importance assessed for each energy technology and mean priority rankings for research and development funding.

Table 2.1: Comparing Energy Technologies (means: all respondents)

Energy Technology	Importance	Priority for R&D
Solar	7.87 (1)	7.35 (1)
Wind	7.68 (2)	6.85 (2)
Hydro	7.54 (3)	6.32 (3)
Transmission/Distribution	7.21 (4)	5.69 (4)
Geothermal	7.15 (5)	6.41 (5)
Biomass	6.58 (6)	4.67 (10)
Fuel Cells	6.50 (7)	4.79 (6)
Clean Coal	6.38 (8)	4.68 (9)
Nuclear	6.28 (9)	4.71 (8)
Oil and Gas	6.15 (10)	4.75 (7)

Notice that the order of perceived importance and priority for research and development investments are identical for the first five energy technologies. Clearly, solar, wind, and hydro generation (which can include not only hydroelectric generation from dams but also wave action generation) are judged the most important energy technologies and also the most worthy of future investment. It may surprise some that the transmission and distribution of electricity is ranked fourth, and that geothermal makes it into the top five.[2]

The remaining energy technologies show subtle distinctions between considerations of "importance" and priority for R&D, with the biggest distinctions shown for oil/gas and biomass technologies. Technologies to increase the efficiencies of finding and extracting our own oil and gas deposits receive the lowest importance rating, but R&D of oil and gas extraction methods receives a priority of seven. Biomass technologies are rated sixth in importance and last in priority for R&D. While we cannot know all the factors involved in such distinctions, differences logically could result, in the case of oil and gas, from public desires to reduce environmental conse-

[2] Though America leads the world in geothermal electricity generation, geothermal sources produced only about 0.4 percent of total US electricity in 2009 (U.S. Energy Information Administration 2010).

quences, and in the case of biomass, because of a perception that growing plant materials does not require significant R&D.

Though there are some minor distinctions among men and women, those with and without college degrees, and those below and above the age of 50, the largest differences in ratings and rankings are associated with political partisanship. Those respondents who identify as strong Democrats or Democrats rate the ten energy sources much as are shown in Table 2.1, but those who identify as strong Republicans or Republicans order the listed energy technologies quite differently, as shown by the mean importance ratings compared in Table 2.2.

Table 2.2: Mean Importance Ratings by Partisanship

Energy Technology	All Respondents	Strong Democrats + Democrats	Strong Republicans + Republicans
Solar	**7.87 (1)**	8.32 (1)	7.51 (2)
Wind	**7.68 (2)**	8.12 (2)	7.24 (4)
Hydro	**7.54 (3)**	7.71 (3)	7.52 (1)
Trans/Distribution	**7.21 (4)**	7.32 (5)	7.38 (3)
Geothermal	**7.15 (5)**	7.34 (4)	7.17 (5)
Biomass	**6.58 (6)**	6.89 (6)	6.63 (9)
Fuel Cells	**6.50 (7)**	6.74 (7)	6.54 (10)
Clean Coal	**6.38 (8)**	6.34 (8)	6.76 (8)
Nuclear	**6.28 (9)**	6.11 (9)	6.91 (7)
Oil and Gas	**6.15 (10)**	5.82 (10)	7.11 (6)

Republicans place hydro generation and solar first (statistically indistinguishable), followed by transmission and distribution technologies, and then wind technologies. For Republicans, oil and gas technologies are rated much higher than among Democrats, and greater importance is assigned to nuclear technologies as well. These kinds of differences illustrate how political debate about a comprehensive national energy policy may partially take shape along partisan lines.

Short Answer

Q: What comparative levels of importance do Americans assign to prospective energy technologies, and how are priorities differentiated by demographics and partisan subgroups?

For all ten energy technologies we included for evaluation, the *importance* placed on R&D averages well above midscale. However, three categories of *priority* for research and development can be discerned. The emphasis of our inquiry is on the future, where most respondents place solar, wind, and hydro generation technologies in the top tier in terms of priority for R&D investments. A mid-level tier also is evident, consisting of electrical transmission and distribution technologies, geothermal, biomass, and fuel cell technologies. For the US energy future, clean coal, nuclear generation, and oil and gas are given lower priority by most participants. Future energy priorities are differentiated by political partisanship, with Republicans placing greater importance on electrical transmission and distribution technologies and US oil and gas development, while assigning lower priority to biomass and fuel cell technologies.

Section 2.3: Environmental Security

Debate over scientific findings on climate change may be slowly eroding public confidence that a scientific consensus exists about causes. While the debate is far too extensive to address adequately here, our data suggest that the credibility of what may be a majority of scientific opinion is being undermined by opposing political and scientific argument. This is neither unusual nor unexpected in technical policy debates, but we see indications that increasing numbers of respondents are becoming skeptical about man-made causes for warming. To illustrate this shift, we examine trends in beliefs about whether greenhouse gases are causing warming, and perceptions of risks to people and the environment posed by global warming.

Are Greenhouse Gases Causing Global Warming?

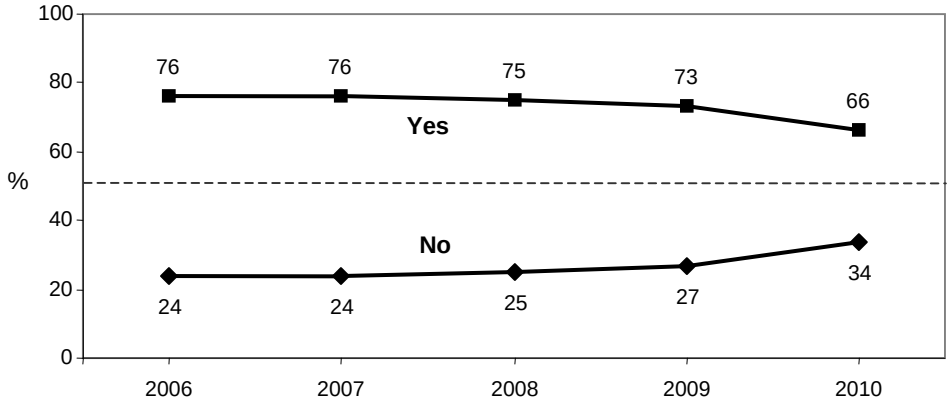
Since 2006, we have asked the following two questions annually.

- E27: In your view, are greenhouse gases, such as those resulting from the combustion of coal, oil, natural gas, and other materials causing average global temperatures to rise?

- E28: On a scale from zero to ten, where zero means *not at all certain* and ten means *completely certain*, how certain are you that greenhouse gases <are/are not from prior question> causing average global temperatures to rise?

In Figure 2.10, we compare trends in the mean percentages of those who think greenhouse gases *are* and *are not* causing global warming.

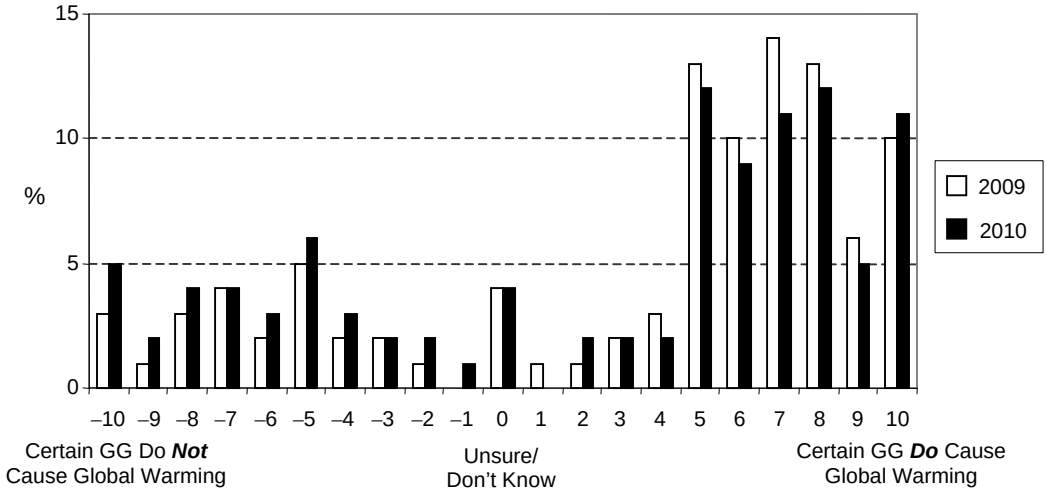
Figure 2.10: Do Greenhouse Gases Cause Global Warming?



Since 2007, a trend is apparent in which the proportion of respondents is declining who think greenhouse gases cause global warming, while the proportion who doubt that causal relationship is increasing.

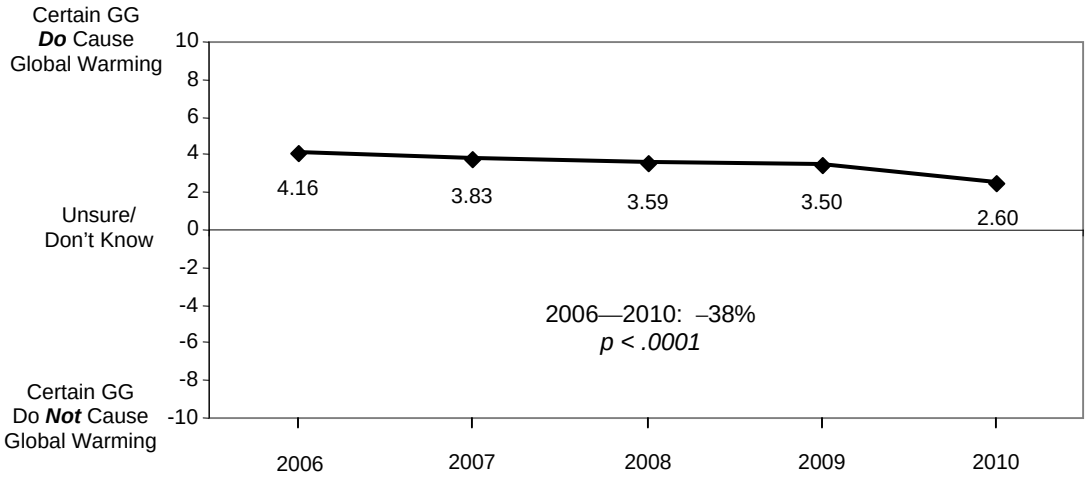
To address the certainty with which such views are held, we combine responses to both questions to create a continuous scale from –10 to +10 where –10 means the respondent is completely certain that greenhouse gases do *not* cause global warming; zero means the respondent is unsure or does not know; and +10 means the respondent is completely certain that greenhouse gases *do* cause global warming. In Figure 2.11, we compare the distribution of resulting responses in 2009 and 2010.

Figure 2.11: Certainty of Views on Greenhouse Gases and Global Warming



Two points are notable from the distributions shown in Figure 2.11. First, those participants who believe greenhouse gases are causing global warming are more certain of their views than are those who do not believe greenhouse gases are causally related to warming. Second, certainty levels in 2010 among those who believe greenhouse gases cause warming is substantially lower than among their counterparts in 2009. Conversely, certainty that greenhouse gases do *not* cause warming is higher in 2010 than the previous year. In Figure 2.12 we illustrate the longer-term trend in mean certainty by comparing means on the same –10 to +10 scale for each year since we began measuring this issue in 2006.

Figure 2.12: Mean Certainty about Greenhouse Gases and Global Warming



Since 2006, the mean certainty with which our respondents believe a causal link exists between greenhouse gas emissions and global warming has declined about 38 percent, which is statistically significant.

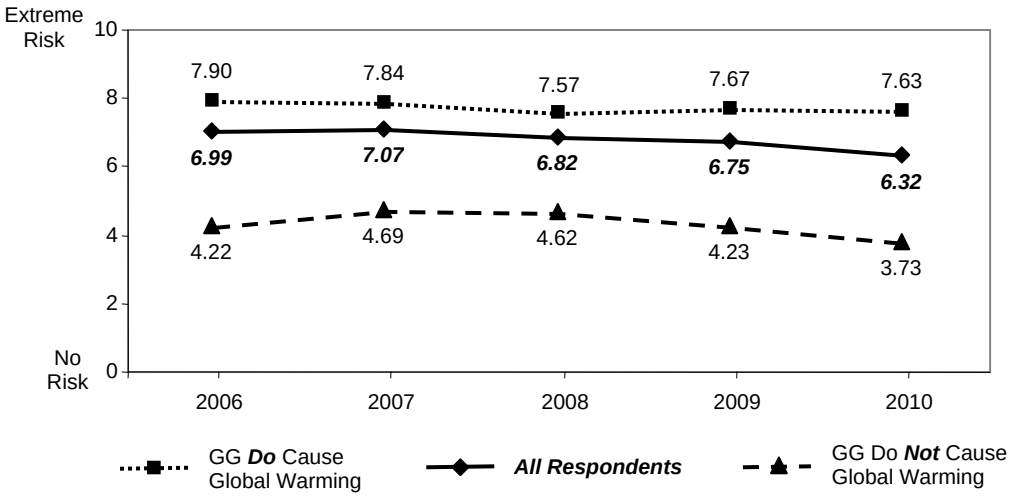
Another important aspect of evolving public opinion about climate change is the perceived level of risk that global warming poses to people and the environment. A related inquiry is the importance participants place on reducing greenhouse gas emissions. To track those factors, we have been asking the following questions since 2006.

- E29: On a scale from zero to ten, where zero means *no risk* and ten means *extreme risk*, how much risk do you think global warming poses for people and the environment?

- E30: On a scale from zero to ten, where zero means *not at all important* and ten means *extremely important*, how important do you think it is for the US to reduce greenhouse gas emissions?

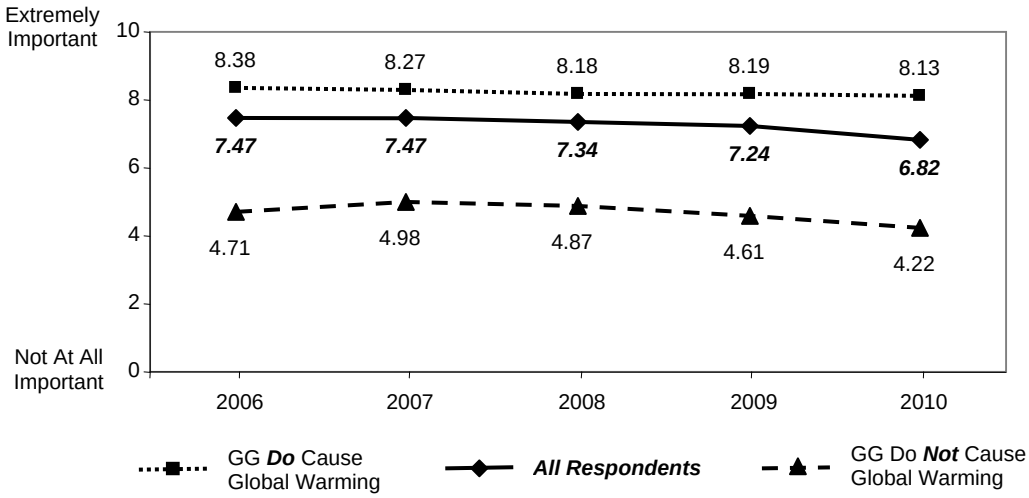
In Figure 2.13, we compare trends in mean risk perceptions among all respondents contrasted with risk perceptions of those who believe greenhouse gases are and are not causing global warming. Figure 2.14 shows the trend in mean levels of importance associated with reducing US emissions of greenhouse gas emissions.

Figure 2.13: Mean Risks of Global Warming to People and the Environment



While it is not surprising that those respondents who believe greenhouse gases cause global warming rate the risks of warming substantially higher than those participants who do not believe warming is caused by greenhouse gas emissions, the change in means for all three groups over time is noteworthy. Mean risk assessments for each of the three groups are statistically significantly lower in 2010 than when first measured in 2006 ($p <$ .001). This suggests that regardless of the causal relationship assumed between greenhouse gas emissions and global warming, the risks perceived to result from warming are declining, on average.

Figure 2.14: Mean Importance of Reducing Greenhouse Gas Emissions



The trend lines in Figure 2.14 show that as perceived risks from global warming have declined, so too has the mean assessed importance of reducing greenhouse gas emissions, but those judgments remain strongly differentiated by beliefs about whether greenhouse gases cause warming. While the rating of 6.82 for all respondents reported in 2010 remains high in absolute terms, it is statistically significantly lower than the 7.47 recorded in 2006 and 2007, as are mean risk perceptions among those who do and do not believe warming is caused by greenhouse gas emissions ($p <$.001).

Early Impressions of Cap-and-Trade

Efforts to reduce greenhouse gas emissions by setting limits and allowing trading among those who do not use allowed emissions limits is an emerging issue area that may figure importantly in future comprehensive energy policy development. To help establish an early benchmark against which evolving opinion can be measured in the future, we introduce a three-question set in 2010 that begins with the following two general inquiries.

- E32: On a scale from zero to ten, where zero means *nothing* and ten means *a great deal*, how much, if anything, have you heard about a policy being considered by the president and Congress called "cap-and-trade" that would set limits on carbon dioxide emissions?

- E33: Under the cap-and-trade proposal, the federal government would limit the amount of greenhouse gases that companies could produce in their factories or power plants. If companies exceed those limits, they would either pay a fine or pay money to other companies that produced smaller amounts of greenhouse gases. On a scale from one to seven, where one means *strongly oppose* and seven means *strongly support*, how do you feel about the cap-and-trade proposal?

Only about ten percent of our respondents indicate that they have heard "a great deal" about cap-and-trade, while 19 percent indicate they have heard "nothing" about the proposed policy. The mean response of 4.76 suggests that this emerging issue has begun to gain purchase with some members of the public, but is not yet widely known.

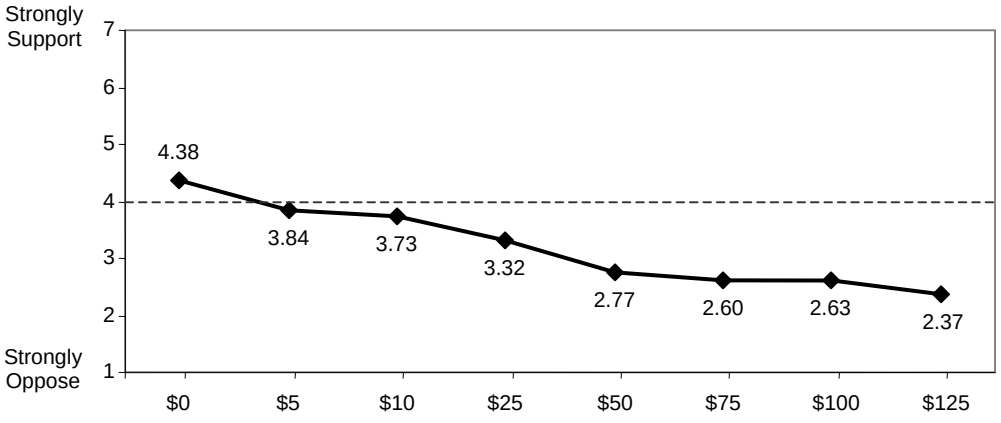
After providing a very brief introduction to the program in our second inquiry, 52 percent indicate some level of support, while 28 percent report opposition, and 21 percent indicate they are undecided. Among those who believe greenhouse gases cause global warming, mean support is 5.02, while those who believe that greenhouse gases do not cause warming report a mean of 3.08 ($p < .0001$). The overall mean of 4.38 (near midscale) suggests that ample policy space exists for further policy development, and while most of our respondents are at least willing to consider such mechanisms, policy acceptance will be conditioned by beliefs about whether a causal link exists between greenhouse gas emissions and global warming.

As the costs of such programs largely are passed to consumers, support predictably will decline. We tested sensitivity to different household cost levels with the following inquiry.

> E34: Using a scale from one to seven, where one means *strongly oppose* and seven means *strongly support*, if a cap-and-trade program significantly lowered greenhouse gas emissions but raised your monthly electrical bill by (random: $5, $10, $25, $50, $75, $100, $125) per month, how would you feel about that program?

In Figure 2.15 we plot mean support for each comparative cost level.

Figure 2.15: Mean Support for Cap-and-Trade at Varying Personal Costs



As previously noted, support for most policies can be expected to decline as household costs increase, and cap-and-trade appears to be no exception. However, it is noteworthy that what is reported as mild support at no cost quickly moves to opposition at even nominal cost levels, suggesting that as cap-and-trade policy evolves, associated costs will figure heavily in policy debate and public reception.

Short Answer

Q: How are views on global climate change evolving, and how do they relate to support for prospective cap-and-trade policies?

The reporting of political and technical debate about global climate change seems to be eroding public confidence in scientific consensus about the causes of global warming. The proportion of our survey participants who attribute global warming to greenhouse gas emissions has declined from three out of four respondents in 2006 to two out of three in 2010, and mean certainty levels have declined about 38 percent. Perceptions of risks to people and the environment posed by global warming and mean importance ratings for reducing greenhouse gas emissions remain above midscale, on average, but are logically differentiated by those who do and do not believe greenhouse gas emissions cause warming. While cap-and-trade is today an emerging policy issue about which many people have yet to form preferences, support appears to be conditioned by expected household costs. At no increase in household costs, support is slightly above midscale, but quickly turns to opposition as even nominal costs are incurred.

Chapter Three

Nuclear Dimensions of Energy Security

We narrow our focus in this chapter to selected nuclear dimensions of energy security by addressing the following three analytical questions.

- How does the public assess risks and benefits of nuclear energy, and how is public support for or opposition to additional US nuclear generation capacities evolving?
- How do critical design elements, such as the number of sites, types of facilities, retrievability of materials, research facilities, and options for reprocessing relate to public preferences for managing spent nuclear fuel?
- What are the relative levels of public trust in technical information (such as risk assessments) provided by selected research, scientific, regulatory, and watchdog institutions in the United States, and what kinds of institutional biases do Americans perceive?

Section 3.1: Public Assessments of Nuclear Energy

In this section we report public perceptions of various dimensions of risks and benefits that might be associated with nuclear energy, and we report public preferences about constructing additional nuclear generation capacities.

Balancing Risks and Benefits

Public preferences about nuclear energy reflect a mix of competing perspectives about associated risks and benefits. This is neither illogical nor unexpected, but it produces a form of public support that is likely to be sensitive to the occurrence of nuclear energy related accidents or incidents occurring anywhere in the world. We have been tracking multiple measures of perceived nuclear energy risks and benefits annually since 2006, and we report

trends in those relative measures over the ensuing five years, but while ambient support for nuclear generation is important, it also is crucial to understand that existing levels of support can be expected to maintain only so long as serious events relating to nuclear generation that might be perceived to threaten public safety do not occur.

Since 2006 we have used the following questions to rate perceived risks in four areas relating to nuclear generation.

> *Lead-in*: Next we want to ask about your beliefs about some of the possible risks associated with nuclear energy use in the US. Please consider both the likelihood of a nuclear event occurring and its potential consequences when evaluating the risk posed by each of the following on a scale from zero to ten, where zero means *no risk* and ten means *extreme risk.* (random order)
>
> - E58: An accident at a US nuclear power plant within the next 20 years that results in the release of large amounts of radioactivity
> - E59: An accident during the transportation or storage of spent nuclear fuel from nuclear power plants in the US within the next 20 years that results in the release of large amounts of radioactivity
> - E60: A terrorist attack at a US nuclear power plant within the next 20 years that results in the release of large amounts of radioactivity
> - E61: The diversion of nuclear fuel from a nuclear power plant in the US within the next 20 years for the purpose of building a nuclear weapon

As shown in Table 3.1, mean responses are highly consistent over time, and the relative order of perceived risks is the same in each of the annual surveys between 2006 and 2010. The greatest risk is judged to result from the possibility of a terrorist attack on a US nuclear power plant.

Table 3.1: Mean Nuclear Energy Risk Assessments: 2006–2010

	2006	2007	2008	2009	2010
E60: Terrorist attack on US nuclear power plant	6.87	6.93	6.58	6.77	6.72
E59: Accident in transportation or storage of SNF	6.28	6.19	6.23	5.42	6.23
E58: Accident at US nuclear power plant	6.13	6.17	6.07	6.35	6.19
E61: Diversion of nuclear fuel to nuclear weapons	5.69	5.60	5.66	5.80	5.63

As reported in Chapter Two, Figure 2.4, combined risks of nuclear generation are now closely equated with those of generating electricity by burning fossil fuels.

In similar fashion to our risk inquiries, we also ask participants to rate perceived benefits associated with nuclear generation using the following questions.

> *Lead-in*: Now we want to know about your beliefs about some of the possible benefits associated with nuclear energy use in the US. Please evaluate the benefits associated with each of the following on a scale from zero to ten, where zero means *not at all beneficial* and ten means *extremely beneficial*. (random order)
>
> - E62: Fewer overall greenhouse gas emissions because nuclear energy production does not create greenhouse gases
> - E63: Reliable power because nuclear energy generates large amounts of electricity and is not affected by weather conditions, such as low rainfall or no wind
> - E64: Greater US energy independence because nuclear energy production does not require oil or gas from foreign sources
> - E65: Reduced environmental damage because of less need for mining coal or extracting oil and gas

We display mean responses to each since 2006 in Table 3.2.

Table 3.2: Mean Nuclear Energy Benefit Assessments: 2006–2010

	2006	2007	2008	2009	2010
E64: Greater US energy independence	7.37	7.60	7.37	7.36	7.41
E63: Reliable source of electrical power	7.25	7.46	7.22	7.22	7.25
E65: Less environmental damage from extracting fossil fuels	7.02	7.43	7.16	7.24	7.10
E62: Fewer overall greenhouse gas emissions	7.09	7.36	7.05	7.13	7.06

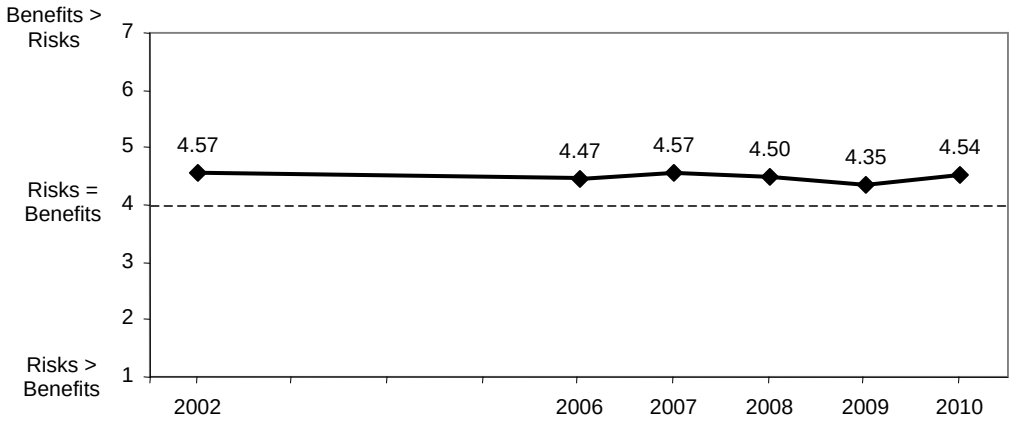
While mean rated benefits of nuclear energy are slightly less internally consistent over time than are risk ratings, the highest scoring benefit of nuclear en-

ergy in each survey is greater US energy independence. Notice that all mean benefit ratings in each measurement period are higher than any of the four assessed risks shown in Table 3.1. These tables illustrate how multiple national samples taken over a five-year period yield highly consistent assessments of individual risks and benefits perceived to be associated with nuclear energy.

Our final inquiry in this series asks participants to integrate risk and benefit considerations using the following question first posed in 2002. We plot the trend in mean responses since that time in Figure 3.1.[1]

> E66: Using a scale from one to seven, where one means the risks of nuclear energy far outweigh its benefits, four means the risks and benefits are equally balanced, and seven means the benefits of nuclear energy far outweigh its risks, how do you rate the overall balance of the risks and benefits of nuclear energy in the US? Remember, you can choose any number from one to seven.

Figure 3.1: Trend in Mean Nuclear Energy Risk/Benefit Balance



On balance, participants consistently consider the benefits of nuclear energy to outweigh associated risks.

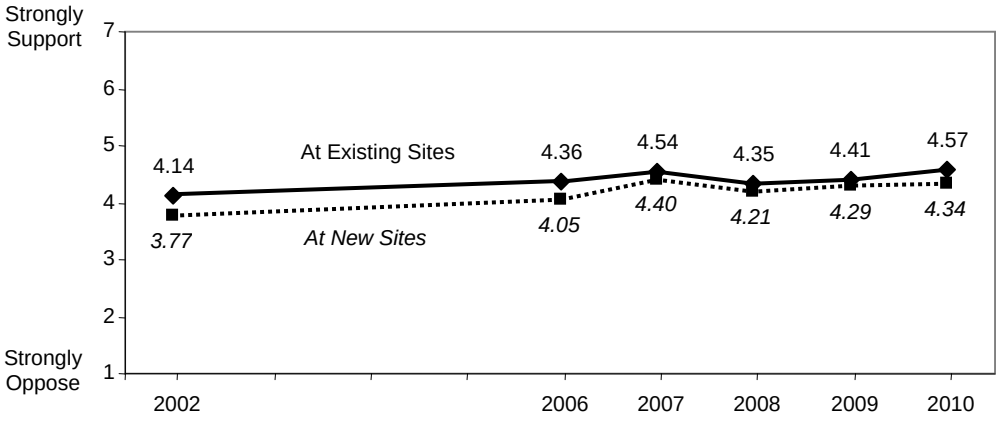
[1] This question was not asked in the years between 2002 and 2006.

Attitudes About Additional Nuclear Generation Capacities

To test public receptivity to building additional nuclear power reactors, we asked the following two questions (in random order), beginning in 2002. We compare mean responses in Figure 3.2.[2]

- E67: Using a scale from one to seven, where one means *strongly oppose* and seven means *strongly support*, how do you feel about constructing additional nuclear reactors at the sites of existing nuclear power plants in the US?
- E68: Using the same scale from one to seven, where one means *strongly oppose* and seven means *strongly support*, how do you feel about constructing additional nuclear power plants at new locations in the US?

Figure 3.2: Trends in Mean Support for Additional US Nuclear Reactors



Several points seem relevant from these trends. First, all means since 2006 are above midscale, indicating support for additional generation capacities at existing sites or new locations, and both trends are upward. Over the past eight years, mean support for adding nuclear reactors at existing sites increased about 10 percent ($p < .0001$), and support for building new nuclear power plants grew by about 15 percent ($p < .0001$). Though the difference between mean support for the two options is statistically significant in 2010 ($p < .0001$), the gap has narrowed since 2002 in absolute terms. While these

[2] These questions were not asked in the years between 2002 and 2006.

response patterns do not constitute a public demand for additional nuclear generation capacities, they do indicate substantial and growing support.

When responses to both questions are combined for form an index, we find that mean support for additional nuclear generation capacities increases systematically with age, education, income, and political conservatism. Average support is lower among women and racial/ethnic minorities.

Short Answer

Q: How does the public assess risks and benefits of nuclear energy, and how is public support for or opposition to additional US nuclear generation capacities evolving?

Among four specified risks of nuclear generation, the risk of terrorist attacks on US nuclear power plants consistently is rated highest. Among four specified benefits, reducing US dependence on foreign sources of energy consistently is rated highest. When asked to balance overall risks and benefits of nuclear energy, benefits are perceived, on average, to outweigh risks, and that judgment has remained consistent over the past eight years. Public support for additional nuclear generation capacities either at existing locations or at new sites is above midscale and increasing. Since 2002, mean support for adding reactors at existing sites has grown 10 percent, and mean support for constructing new nuclear power plants—while statistically significantly lower than support for adding reactors at existing sites—has increased 15 percent over the same period.

Section 3.2: Managing Used Nuclear Fuels

To investigate requirements of a technically credible, workable, and publicly acceptable framework for managing the nuclear fuel system, we explore how policy design helps set the starting conditions for policy debates and helps shape public support or opposition. Traditionally, key features of the design for managing used nuclear fuel (UNF) in the US have been based on two key assumptions: (a) the materials are once-through "waste," and (b) repository facilities are intended exclusively to permanently entomb that "waste." These starting assumptions have framed public debate,

which has been dominated by arguments about the prospects for minimizing physical, economic, and social risk or harm to the prospective host site, nearby communities, and parent state. We explore how questioning those assumptions and conceiving repositories having variable design elements intended to offset perceived harm may affect public receptivity.

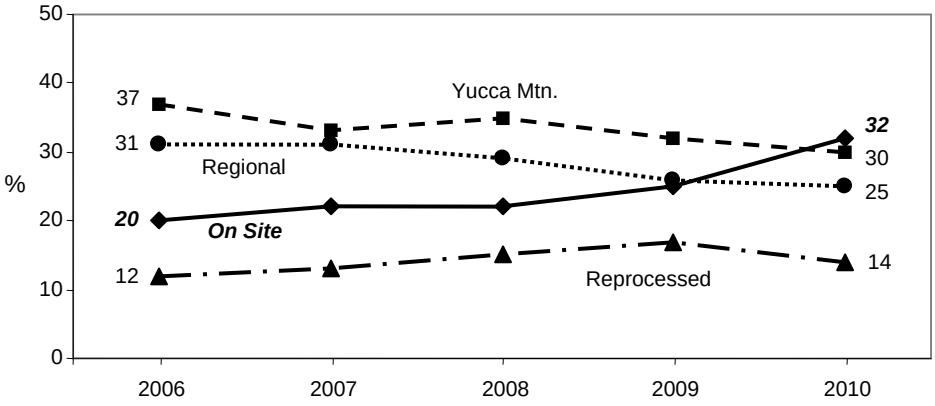
We begin by reporting public awareness of and support for current UNF management practices. Then we explore how varying repository attributes may affect public support or opposition.

Awareness of and Support for Current Practices

Since 2006 we have been tracking responses to the following question intended to measure awareness of current UNF policy, and in Figure 3.3 we compare trends in mean responses.

> E70: As nuclear fuel is used to generate electricity, it becomes contaminated with radioactive byproducts. When it can no longer efficiently produce electricity, it is called used or spent nuclear fuel. To the best of your knowledge, what is currently being done with most of the spent nuclear fuel produced in the US? Is it … (random order)
>
> - Stored in special containers at nuclear power plants throughout the US?
> - Shipped to Nevada and stored in a facility deep underground?
> - Chemically reprocessed and reused?
> - Shipped to regional storage sites?

Figure 3.3: Mean Knowledge of Current Disposition of US Used Nuclear Fuel



Though awareness is growing, only about one in three of our respondents in 2010 are aware of the current practices of storing used nuclear fuel at designated nuclear power plant facilities. About another one-third think UNF is being shipped to Nevada, and the remaining one-third are split between assuming regional storage sites or reprocessing. These data from multiple surveys over the past five years clearly demonstrate that most Americans are unaware that UNF currently is being stored temporarily at more than 100 sites in 39 states.

When asked if used nuclear fuel is being stored above ground at any nuclear power plant within the respondent's state of residence, only 12 percent of participants answer correctly.

When substantial levels of public unawareness or misinformation are encountered, some policy experts may discount the value of public opinion because it is not sufficiently factually informed. But that is not how public debates about policies having technical complexities actually proceed. In practice, advocacy coalitions are formed initially by policy elites, scientific opinion is marshaled (often on multiple sides and often contradictory in nature), and as policy debate ensues among technical and elite communities, mass publics gradually become better informed and reach preferences that eventually help determine policy options and outcomes. An ongoing example of these processes is represented by current debate over global climate change. Public debate about managing used nuclear fuel has yet to reach a similar level of intensity, but disregarding public opinion during the early

stages of technical debates can lead to serious policy mistakes, and special methods are required to help gage nascent or potential public receptivity.

When testing reactions to policy alternatives for technical issues about which most members of the public largely are uninformed or misinformed, we employ a well tested three-stage technique. In the first stage, we provide a common foundation of basic factual information. Then we present balanced arguments for and against current or potential policy options. In the final stage, we ask participants for their reactions to expressed policies and alternatives. This technique more closely parallels the way such debates and policy processes actually evolve. Equally importantly, it allows policy debates to be informed by latent or potential public preferences that may emerge as a debate matures. This has the benefit of providing valuable insights into what kinds of policy variables may influence public support and in what directions latent support or opposition might be anticipated.

To provide the shared foundation of basic knowledge about used nuclear fuel in this survey, we present the following information to all respondents.

> Spent nuclear fuel is highly radioactive and must be safeguarded for thousands of years or chemically reprocessed. If it is reprocessed, the uranium can be separated from the waste and reused to make new fuel rods for generating electricity, but the remaining elements are highly radioactive for a very long time and must be safeguarded and isolated from the environment for thousands of years.
>
> In 2010 the government halted construction of a deep underground facility inside Yucca Mountain in Nevada that had been intended for long-term disposition of spent nuclear fuel, and very little spent nuclear fuel is being reprocessed in the US.
>
> Currently, US spent nuclear fuel is being temporarily stored at over 100 sites in 39 states. Most of it is stored at nuclear power plants where it is placed in secure cooling pools. In some cases, the spent fuel is transferred to specialized concrete casks stored above ground near the nuclear power plant. At each site, the cooling pools and storage casks are protected at all times by security forces. Some people think this is an acceptable solution for the foreseeable future while others think such practices are risky and other options need to be adopted.

Next we present the following opposing arguments in random order.

Opponents argue that some nuclear power plants where spent nuclear fuel is stored are near rivers, oceans, and large population centers. On rare occasions spent fuel has leaked radiation into the cooling pools. Moreover, the cooling pools and containers are located at ground level, and therefore might be vulnerable to terrorists. They note that these storage practices do not provide a permanent solution for managing spent nuclear fuel.

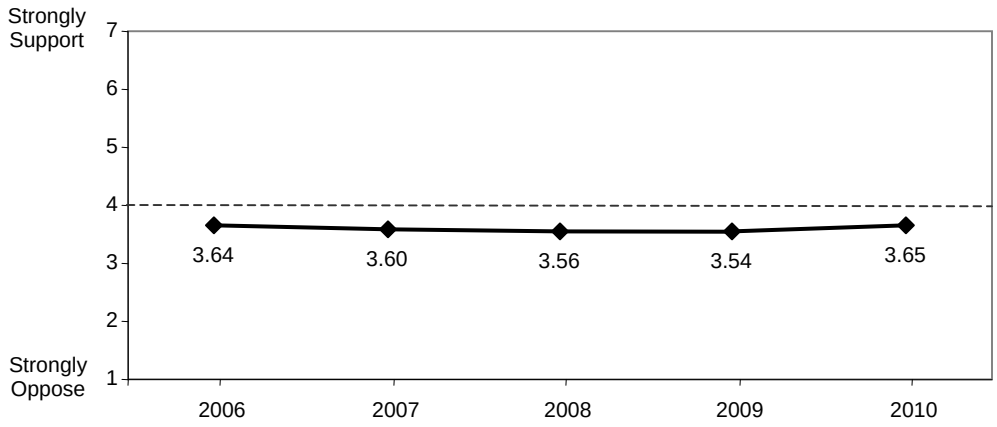
Supporters argue that transporting spent nuclear fuel by train or truck to consolidated storage facilities is risky, that storing spent nuclear fuel at nuclear power plants is less expensive than consolidated storage, and that it buys time for finding future solutions. Moreover, storage at nuclear power plants has not caused any accidents that have exposed the public to radiation.

In the final stage, we ask the policy question of interest.

E72: Using a scale from one to seven, where one means *strongly oppose* and seven means *strongly support*, how do you feel about the current practice of storing spent nuclear fuel at or near nuclear power plants?

In Figure 3.4 we compare mean responses since 2006.

Figure 3.4: Mean Support for Current Used Nuclear Fuel Storage Policies



When informed of current used nuclear fuel management practices, most respondents consistently have expressed mild opposition since our first measurement in 2006. In 2010, 26 percent support the policy, 40 percent oppose it, and 34 percent are undecided. However, these preferences are expressed in the abstract, without alternative policy options against which to

compare relative acceptability. While the public is decidedly uneasy about indefinite on-site storage, consistent means that are near midscale suggest that considerable latitude exists for policy evolution, and as other options are considered, views of on-site storage could change relative to specified alternatives. We next explore how public support for UNF management strategies may be influenced by policy design options.

Implications of Policy Design on Public Preferences

To gage the implications of repository design variables, we test public receptivity to comparative storage concepts and numbers of sites, retrievable vs. permanent storage, storage depth, chemical reprocessing, co-locating research or reprocessing facilities with repositories, and monetary incentives to promote host community acceptability.

Alternative Storage Strategies and Numbers of Sites

The above attitudes toward current on-site storage practices considered in isolation can be placed in a more policy relevant context if evaluated relative to alternative strategies for disposing of UNF. To provide a comparative context, we present the following additional information about alternative strategies that require consideration of three important factors: the physical security of radioactive materials, requirements for transporting materials over varying distances, and potential levels of political and legal opposition that may be expected with different disposal concepts. After introducing the additional information and policy considerations, we present three concepts for managing UNF (one of which is the existing practice of on-site storage) and ask participants to indicate their levels of support/opposition to each. This requires that on-site storage be considered in the context of specific alternatives. Of course three concepts for managing UNF cannot comprehensively represent all viable policy choices, but we designed these options to present markedly different policy considerations that require balancing physical security, transportation, and potential opposition.

We begin by presenting the following additional policy considerations.

Lead-in: Now we want your general views about various options for future management of spent nuclear fuel. There are no right or wrong answers, and it is not necessary that you have expert knowledge about these issues. We are interested in what you think about some of the choices that must be made about managing radioactive materials.

First we want you to consider the number of storage sites for spent nuclear fuel. While nuclear power plants will continue to store some spent fuel in their cooling pools, much of the radioactive materials currently at temporary storage sites in 39 states might be consolidated at a smaller number of regional or central facilities. Once it is consolidated, the spent nuclear fuel can more easily be secured and protected from attack. The fewer the number of regional or central storage facilities, the less complex are the political and legal obstacles for finding communities willing and able to host the facilities. At the same time, a larger number of regional storage facilities would reduce the distances radioactive materials must be transported by train or truck, and would also reduce the number of communities through which the transport routes would pass.

Please respond to the three following policy options on a scale from one to seven, where one means *strongly oppose* and seven means *strongly support.* (random order)

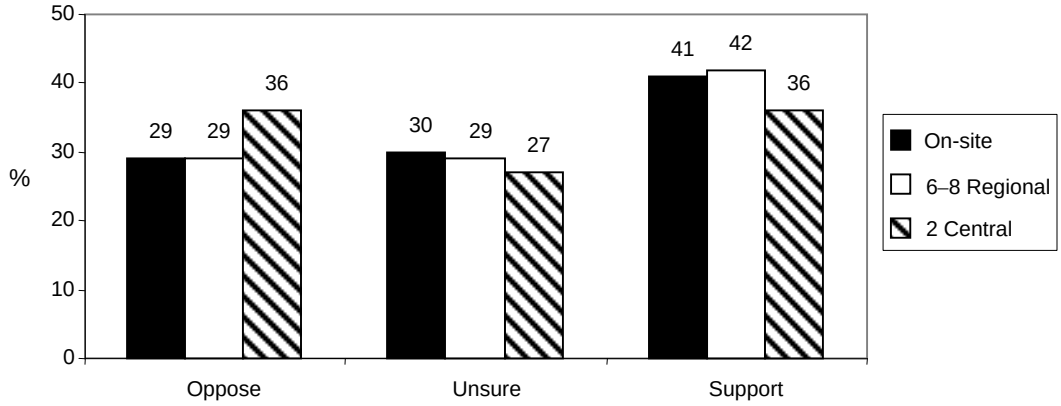
- E73: After spent nuclear fuel is removed from the cooling pools, continue the current practice of temporarily storing it above ground at designated nuclear power plants. This option does not require additional transportation of radioactive materials by train or truck, and it presents few additional political or legal obstacles.

- E74: Construct six to eight regional storage sites that can be more easily secured and can provide longer-term storage. This option requires transporting spent nuclear fuel by train or truck over moderate distances and is likely to generate political and legal opposition.

- E75: Construct two large centralized storage sites (one in the western US and one in the east) that can be most secure and provide permanent storage. This option requires transporting spent nuclear fuel by train or truck over longer distances and is likely to generate political and legal opposition.

We compare grouped responses to each in Figure 3.5

Figure 3.5: Comparing Concepts and Numbers of Sites for Managing UNF



Several points are evident from these results. Strong preferences for a specific number of repositories have yet to develop, suggesting that there remains considerable latitude for determining an acceptable option. While the option for several regional sites is slightly favored, support for the current practice of dispersed on-site storage is statistically indistinguishable. Note that the 40 percent of respondents who oppose on-site storage when considered in isolation (reported above) drops to 29 percent when asked to consider it in comparison to our other two specified options and to weigh issues of physical security, transportation, and potential opposition to policy alternatives. However, support for a larger number of sites—whether regional or continued at existing power plant facilities—is greater than support for two centralized sites. This suggests that the public would not rule out multiple repositories, even when asked to consider potential political and legal opposition. Issues of proximity to storage facilities will be addressed below.

Retrievable vs. Permanent Storage

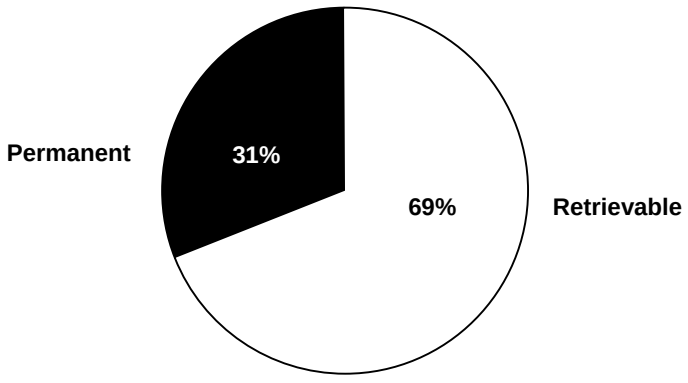
Considerations of whether UNF should be stored in a safe manner that facilitates retrieval or whether it should be permanently sealed away and safeguarded seem to be related conceptually to two broad factors. One is the degree to which used nuclear fuel is considered a resource that can be reprocessed and reused and, alternatively, the degree to which it is viewed as a waste that must be disposed. The other consideration relates to the degree to which UNF is perceived to be amenable to future technological developments that might yield new and safer ways of management. In the European debate over UNF, distinctions have

been made between *retrievability*, which is restricted to physically retrieving the UNF from a repository, and *reversibility*, which can be understood to incorporate the option to change disposal policies should better options become available (Organization for Economic Cooperation–Nuclear Energy Agency 2001, 11). It is reasonable to assume that these considerations also may affect American attitudes about policies for managing nuclear materials.

We address the issue of retrievable storage vs. permanent disposal in our 2010 survey by providing the following lead-in discussion, followed by two direct preference questions. We chart results in Figure 3.6.

> *Lead-in*: Now we want you to consider the issue of whether stored radioactive materials should be managed in a way that allows authorized personnel to gain access to them and retrieve the materials in the future, or that seeks to permanently block access to them. One option is to build facilities where the stored materials are continuously monitored and can be retrieved for reprocessing, or possibly to make them less dangerous using future technological developments. This option requires greater security efforts and may be more vulnerable to attack or theft. Another option is to attempt to seal off storage sites in such a way that people cannot readily gain access to the materials in the future. This option is more secure, but does not allow reprocessing or treatment by future technological advancements.
>
> Using a scale from one to seven, where one means *strongly oppose* and seven means *strongly support*, please indicate how you feel about each of the following two options. (random order)
>
> - E77: Construct sites so that stored materials are monitored and could be retrieved for reprocessing or further treatment in the future.
>
> - E78: Construct sites so that stored materials are permanently sealed away and cannot readily be retrieved in the future.

Figure 3.6: Preferences for Retrievable Storage vs. Permanent Disposal: 2010



By a margin of more than two-to-one, participants report a clear preference for retrievability.

Reprocessing

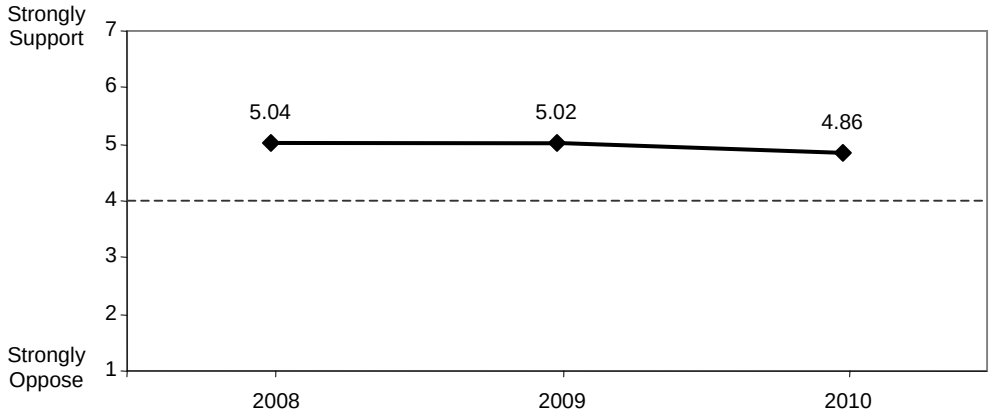
Beginning in 2008, we asked the following question about chemically reprocessing used nuclear fuel. Recall that in the 2010 survey reprocessing is initially described to respondents in provision of background information about current policies as follows:

> Spent nuclear fuel is highly radioactive and must be safeguarded for thousands of years or chemically reprocessed. If it is reprocessed, the uranium can be separated from the waste and reused to make new fuel rods for generating electricity, but the remaining elements are highly radioactive for a very long time and must be safeguarded and isolated from the environment for thousands of years.

Preferences for reprocessing are asked using the following question, the mean responses to which are shown in Figure 3.7.

> *Lead-in*: Next we want you to consider the issue of reprocessing, which involves the chemical separation of radioactive materials in spent nuclear fuel. After reprocessing, most of the uranium and plutonium can be captured and reused to generate electricity, reducing the amount of uranium that must be mined in the US or purchased from other countries. Remaining materials are radioactive and must be safeguarded and isolated from the environment. However, reprocessing may also separate the plutonium which, like uranium, could be used to make nuclear weapons.
>
> - E76: Using a scale from one to seven, where one means *strongly oppose* and seven means *strongly support*, how do you feel about the option for reprocessing spent nuclear fuel?

Figure 3.7: Mean Support for Reprocessing Used Nuclear Fuel



In each of the three survey periods, mean support for reprocessing used nuclear fuel is well above midscale and relatively steady. While decisions about reprocessing will be made based on economic viability, investment costs, siting opportunities, regulatory considerations, and other factors, public opinion seems generally supportive, and as we will show, retaining the option of incorporating reprocessing capabilities into repository design can influence levels of public support.

Storage Depth

To explore receptivity to alternative storage depths, we pose the following series that incorporates variations of depth, retrievability, and permanence.

> *Lead-in*: Now we want you to consider the issue of storage depth. There are three general options. (random order)
>
> One option is to store spent nuclear fuel at or near the surface in hardened structures of concrete and steel. This allows monitoring and retrieval, but it is considered to provide a safe means to manage the material for only about a hundred years.
>
> One option is to build mine-like storage facilities that are thousands of feet underground. These can be constructed to allow materials to be retrieved, or they can be designed to permanently block access in the future. They are suitable for storage over thousands of years.

One option involves drilling multiple boreholes of about 1.5 feet in diameter and up to three miles deep. Spent nuclear fuel would be stored in the deepest parts of the boreholes that are in bedrock. There is almost no chance that the materials could migrate into the surface environment over thousands of years, and they would be extremely difficult to retrieve.

Please respond to the three following policy options on a scale from one to seven, where one means *strongly oppose* and seven means *strongly support*. (random order)

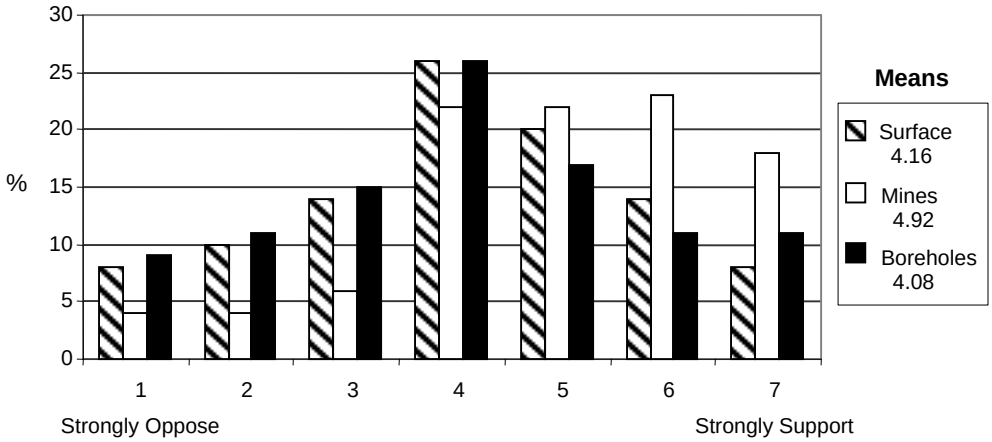
- E79: Construct storage facilities at or near the surface of the earth that are less permanent but allow retrieval for reprocessing, research, or other treatments.

- E80: Construct storage facilities underground that are like mines that could be either permanently sealed or could allow materials to be retrieved.

- E81: Construct very deep boreholes that afford permanent and safe disposal, but would make materials extremely difficult to be retrieved.

In Figure 3.8, we compare distributions and mean responses in 2010.

Figure 3.8: Varying Storage Depth



At this preliminary stage of consideration, our respondents favor mine-like structures over the other two options, with 63 percent indicating support, followed by 42 percent supportive of surface facilities, and 39 percent favoring very deep boreholes. But the sizable percentages at a value of four (indicating undecided), and the fact that a plurality of participants did not

oppose any of the three options, suggest that considerable policy space exists for further developing preferences about storage depth. Because depth of storage also can be associated with retrievability, and because retrievability has been shown to exert a powerful influence on policy preferences, it is difficult to disentangle the depth issue from the retrievability issue. The only one of these options that makes retrievability exceedingly difficult (deep boreholes) also is the least preferred. This suggests that options such as deep boreholes may need to anticipate resistance unless they also incorporate retrievability or are used only for materials that are unsuitable for reprocessing or unlikely to be amenable to remediation in the future.

Collocating Research or Reprocessing Functions with Repositories

Next we investigate the effects of two variations in design features: bundling the repository with a research laboratory and/or with reprocessing facilities. To evaluate the effect of these options, two variations on a "base" repository design are considered: one option is for two centralized mine-like repositories; the other is for seven regional repositories employing deep-borehole disposal. Respondents are randomly assigned to consider only one base option. This split design allows more careful evaluation of the independent variables (adding research or reprocessing facilities) against each of two dependent variables (two mine-like centralized repositories or seven borehole type regional repositories). The description of the two deep geologic base repositories for 1,177 randomly selected respondents is as follows:

> E82: For the next few questions, assume that construction of two underground mine-like storage facilities is being considered for the storage of spent nuclear fuel. One would be in the eastern US and the other in the west. Each of these sites would include secure surface storage buildings and a mine several thousand feet deep where radioactive materials could be isolated from people and the environment and could be designed to allow retrieval or to permanently seal away the materials. The facilities and the mines would be designed to meet all technical and safety requirements set by the US Nuclear Regulatory Commission, the US Environmental Protection Agency, and applicable state regulatory agencies. Using a scale from one to seven where one means *strongly oppose* and seven means *strongly support*, how do you feel about this option?

The description of the regional borehole base repositories for 1,228 randomly selected participants is as follows:

> E83: For the next few questions, assume that construction of about seven regional sites across the US are being considered for the storage of spent nuclear fuel. Each of these sites will include secure surface storage buildings and a number of deep boreholes drilled up to three miles deep into bedrock where the radioactive materials could be isolated permanently from people and the environment. The facilities and boreholes would be designed to meet all technical and safety requirements set by the US Nuclear Regulatory Commission, the US Environmental Protection Agency, and applicable state regulatory agencies. Using a scale from one to seven, where one means *strongly oppose* and seven means *strongly support*, how do you feel about this option?

These more complete descriptions result in moderate public support for both options. The deep-geologic mine option receives an average initial support of 4.82 on the one (strongly oppose) to seven (strongly support) scale. Fifty-eight percent of respondents presented with this option express support, while 16 percent are opposed and 26 percent are undecided. The other half of the sample gives the deep-borehole option a mean support score of 4.49. Fifty-one percent of those receiving this option support it, while 21 percent are opposed and 28 percent are undecided.

After having established these starting points, we next introduce options for combining each of the base repository designs with research laboratory and/or reprocessing facilities to measure how bundling such options affects base support levels. To evaluate the effects of bundling repository attributes, we present the following information and pose the subsequent questions.

> *Lead-in:* Now we want you to consider how your support would be affected by more specific information. Please respond to each of the following questions on a scale from one to seven, where one means the information would *greatly decrease* your support and seven means it would *greatly increase* your support.
>
> - E84: What would happen to your level of support if you learned that each of the sites also would contain a national research laboratory for studying ways to more safely and efficiently manage and dispose of nuclear materials?
>
> - E85: What would happen to your level of support if you learned that each of the sites also would include facilities for reprocessing spent nuclear fuel for reuse in generating electricity?

In Table 3.3 we show effects on support for each of our base repository designs by bundling them with the hypothetical national research laboratory.

We compare changes in support due to addition of the laboratory for those who initially supported, were neutral/undecided, or opposed each base facility design.

Table 3.3: Changes in Support for Base Repository Designs with Research Laboratory

	2 Mine-Like Geologic Repositories (%)			7 Deep Borehole Repositories (%)		
Initial Preference	Support 58	Neutral 26	Oppose 16	Support 51	Neutral 28	Oppose 21
Support Increased	**70**	**55**	**48**	**72**	**61**	**50**
Support Unchanged	20	37	21	19	33	23
Support Decreased	10	8	31	9	6	26

Of greatest policy relevance are those who initially oppose or are neutral to siting repository facilities. Among those initially opposed, approximately half say their support for each of the two base repository designs would increase similarly if either is bundled with a national research laboratory. The numbers are larger (55–61 percent) for those who initially were neutral. This is consistent with findings of earlier studies of public support for facility siting in which it was shown that modifying facilities in a manner that addresses initial risks—both reducing risks and providing benefits germane to those risks—will do the most to increase acceptance of the facility (Jenkins-Smith and Kunreuther 2005). In this case, collocating a national research laboratory that would study "ways to more safely and efficiently manage and dispose of nuclear materials" with a UNF repository serves both to reduce relevant risks and provides high-prestige employment and other economic development benefits. The broad increases in levels of support we find for each base repository design suggest that such bundled facilities may be less susceptible to the kind of stigmatizing imagery ("nuclear waste dump") that opponents can attribute to a stand-alone repository.

We show the effects of bundling the base repository designs with reprocessing facilities in Table 3.4.

Table 3.4: Changes in Support for Base Repository Designs with Reprocessing Facilities

	2 Mine-Like Geologic Repositories (%)			7 Deep Borehole Repositories (%)		
Initial Preference	Support 58	Neutral 26	Oppose 16	Support 51	Neutral 28	Oppose 21
Support Increased	**66**	**47**	**48**	**66**	**56**	**50**
Support Unchanged	21	43	16	21	35	25
Support Decreased	13	10	36	12	9	26

As with the national research laboratory, bundling reprocessing facilities with either base repository design increases support substantially. Among those who either initially oppose or are neutral, about half report that adding reprocessing capabilities will increase their support for the repository. Relatively modest percentages say the bundling will reduce their support. Given the previously reported consistent and generally supportive view most of our respondents have toward reprocessing, this increase in support for the repositories when bundled with reprocessing facilities is not surprising, but it could be policy-relevant.

Our findings suggest that public acceptance of a UNF repository will be sensitive to the *overall* design attributes of the facility. When the facility is exclusively attending to disposal of nuclear materials, perceived risks and associated negative imagery will tend to dominate public receptivity; this is especially true when UNF is designated as “waste” and repositories are tagged as “dumps.” When the repository is more heterogeneous, including design elements that address offsetting risk/benefit considerations (such as research or reprocessing facilities), and when repository designs permit attaching resource value to the nuclear materials, prospects for pubic acceptance can be increased.

Compensation and Public Acceptance

Studies of hazardous facility siting show that providing compensation to host communities can increase public support, but may only be effective if the overall balance of risks and benefits attributed to the facility is within acceptable ranges (Kunreuther and Easterling 1996; Jenkins-Smith and Kunreuther

2001, 2005). To investigate the extent compensation may play in public acceptance of a nuclear repository, we pose the following question in 2010.

> E86: What would happen to your level of support if you learned that each of the states hosting the sites would receive several billion dollars a year, paid for by revenues from nuclear energy, that could be used for hospitals, roads, and schools in that state.

In Table 3.5, we show changes in expressed support among those who initially supported, were neutral, or opposed the repository siting prior to introducing the compensation option.

Table 3.5: Changes in Support for Base Repository Designs with State Compensation

	2 Mine-Like Geologic Repositories (%)			7 Deep Borehole Repositories (%)		
Initial Preference	Support 58	Neutral 26	Oppose 16	Support 51	Neutral 28	Oppose 21
Support Increased	**62**	**42**	**39**	**59**	**52**	**41**
Support Unchanged	20	43	23	24	30	22
Support Decreased	18	15	37	17	18	37

Note that while overall increases in support in response to compensation are evident, changes are more modest than is the case for bundling positive attributes into the design. Among those who initially oppose the siting, the fraction for which compensation *decreases* support is nearly as large as that for which it *increases* support. Among those initially neutral, however, the effect of compensation on increasing support is substantial; between 42 and 52 percent of those who are initially neutral express increased support when compensation is added to the mix. The import is that compensation is likely to have the effect of increasing support largely among those for whom the facility design does not generate strong opposition. For that reason, it appears that primary emphasis should be on specifying facility designs that generate public acceptance, with compensation considered only after the design achieves broad acceptance. Doing so may increase support among those who remain undecided or neutral.

Proximity to Repository Facilities and Public Receptivity

Used nuclear fuel repositories long have been viewed to be one of the most difficult-to-site facilities (Slovic, Flynn and Layman 1991; Jenkins-Smith and Kunreuther 2001). The decision in 2009 to halt development of the Yucca Mountain facility in Nevada illustrates these kinds of difficulties. Two types of evidence seem relevant to US siting decisions. The first consists of systematic measures of the sensitivity of support for repository siting relative to the distance the prospective repository is from an individual's residence. These data can be used to reveal initial preferences prior to policy debates over a specific repository proposal, and our 2010 survey contains these kinds of measurements. The second kind of evidence comes from cases in which measures of public acceptance for an actual repository can be related to distance from the facility. No permanent UNF repositories have been successfully sited in the US, and no systematic data are available on public support for repository siting outside Nevada.[3] Nevertheless, measures of public support for the Waste Isolation Pilot Plant (WIPP) in southern New Mexico, which handles defense related transuranic radioactive materials, provide important evidence for evaluating the effects of proximity on support for repository siting over the course of an extended and ultimately successful repository siting campaign and sustained operations. We draw on data from our most recent study and from previous studies of WIPP to identify lessons about proximity and public acceptance for nuclear materials facility siting.

Our 2010 survey permits analysis of change in support for two broad repository designs described above (mine-like geologic facilities and deep boreholes) as the stipulated distance of the repository site to the respondent's residence is varied. All participants receive the following two questions, one of which includes variable distances. We begin by asking:

[3] The Nevada case, which was singled-out as the nation's only high level nuclear "waste" repository site to be evaluated over the strong and persistent objections of most Nevada elected officials, provides evidence of worst case conditions for garnering public support and illustrates how *not* to conceive and implement a comprehensive national strategy for managing UNF. But Yucca Mountain is instructive in many ways, including: (a) how to allow repository opponents to capture the debate with an almost exclusive focus on risks; (b) how to allow opposing coalitions to stigmatize the materials as "waste" and the facilities as a "dump"; (c) how to lock-in a design (permanent and non-retrievable) that did not allow more attractive design elements to be added; and (d) how to create an impression of inequity by Congressional designation of only one state to bear responsibilities for accepting the entire nation's supply of UNF.

E87: What would happen to your level of support if you learned that one of these sites is to be located in your state?

Responses are provided on a one-to-seven scale where one means the information would greatly decrease support for siting the repository, and seven means the information would greatly increase support. Respondents are then asked:

E88: What would happen to your level of support if you learned that one of these sites is to be located (random: 50, 300) miles from your principle residence?

For this analysis, Table 3.6 shows percentages of respondents who support, are neutral/undecided, or oppose the repository for each of three distance categories: (a) within the respondent's state of residence; (b) within 300 miles of the respondent's principal residence; or (c) within 50 miles of the respondents' principal residence.[4]

Table 3.6: Changes in Support for Base Repository Designs by Proximity

	2 Mine-Like Geologic Repositories (%)			7 Deep Borehole Repositories (%)		
Repository is Within…	Increased Support	No Change	Increased Opposition	Increased Support	No Change	Increased Opposition
Respondent's State	44	30	26	45	27	28
300 Miles of Residence	42	27	31	40	27	33
50 Miles of Residence	30	31	39	40	20	40

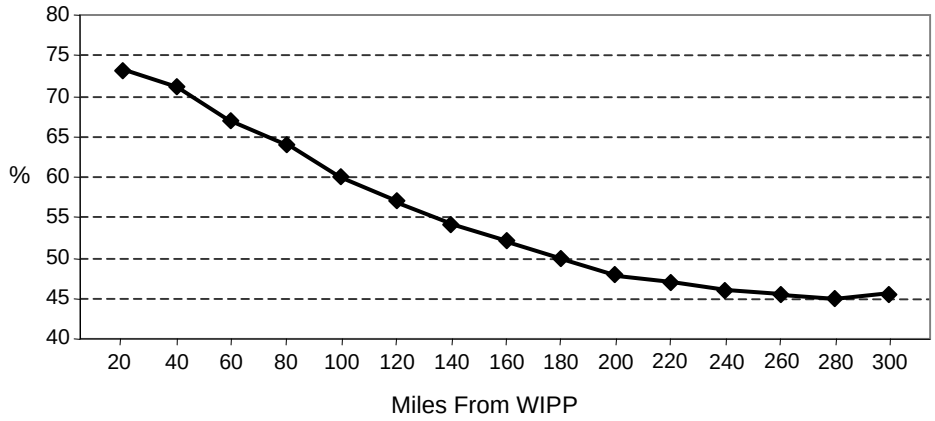
As expected, closer proximity is systematically related to increasing opposition and declining support for siting a repository, but note that substantial fractions of respondents indicate that their support for the facility is *increased* by closer proximity. Even at the 50-mile distance, 30 percent of those considering the mine-like design and 40 percent of those considering

[4] Respondents in the telephone sample were randomly divided into the 300-mile and 50-mile categories, while those in the Internet survey were divided into 300-, 100-, and 50-mile categories. In order to combine telephone and Internet responses, we omit the 100-mile category from this analysis.

the deep-borehole design indicate that the close proximity siting option increases their support. At the same time, the percentage of participants who oppose the facility grows at closer proximities. In this context where we are considering a hypothetical repository, significant fractions of respondents report increased as well as decreased support as the siting is moved closer to their primary residence.

These data suggest that in the context of an actual siting debate, we should expect to see some nontrivial fraction of those closest to the proposed site increase their level of support as a function of proximity. In the case of WIPP, data collected by the University of New Mexico permit analysis of the effect of proximity on support for opening the WIPP facility. These data measured New Mexicans' views on WIPP, including support for opening the facility, using statewide random telephone surveys conducted in the spring and fall of each year from 1990 to 2001 (Jenkins-Smith, Silva, Nowlin and deLozier 2011). Analyses of these data show that mean support for opening the facility increased significantly the closer the respondent's residence (as mapped by residential zip codes) was to the WIPP facility. Figure 3.9 illustrates the estimated level of support for WIPP as a function of distance of the respondent's primary residence from the facility.[5]

Figure 3.9: Support vs. Distance from WIPP Within New Mexico

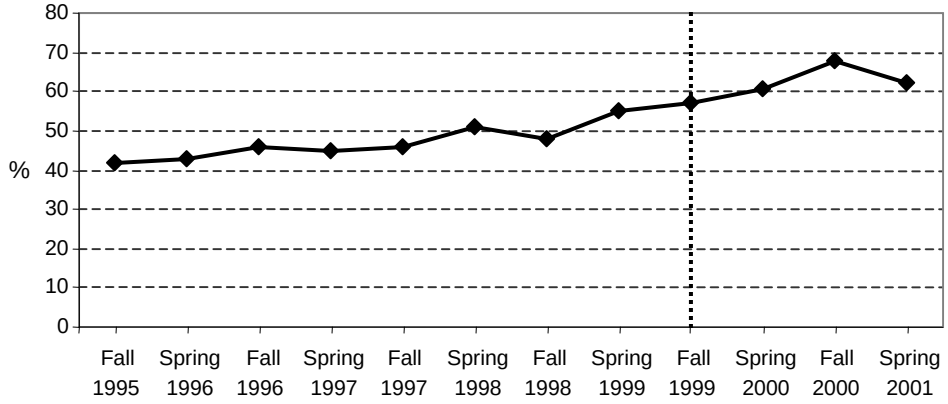


[5] The effects of proximity were modeled using time series regression models with polynomial expressions for distance. See Jenkins-Smith, Silva, Nowlin and deLozier (2011) for details.

Over 70 percent of New Mexico citizens living within 40 miles of WIPP supported the facility, while support dropped to less than half for residents more than 160 miles distant.

These New Mexico data show that, in the context of a long-term debate over repository siting, the actual relationship between proximity and policy acceptance can be positive. The WIPP case is not entirely analogous to prospective UNF repository siting in several respects: the materials range from low-level waste to highly radioactive remote contact-handled materials, and all of the materials at WIPP are deemed wastes without provision for retrieval. Given that the materials at WIPP are not seen as a resource, and that the facility is nearly exclusively designed for permanent disposal, WIPP would seem to be a difficult case for which to obtain public support. In the early years of the policy debate over WIPP, New Mexicans opposed opening the facility by a two to one margin. Support grew over time, and by 1999 (the year WIPP opened) a majority of New Mexicans expressed support for the facility. Figure 3.10 (taken from Jenkins-Smith, Silva, Nowlin, and Delozier, 2011) illustrates that trend (the vertical dotted line indicates the date at which the facility began receiving materials).

Figure 3.10: Percent Vote to Open WIPP



The WIPP case indicates that initial abstract opposition of those closest to a proposed repository can be reversed in the context of a sustained siting initiative. The change over time, and the strong support for WIPP by those closest to the facility, suggest that familiarity and localized benefits (such as jobs, economic development, and desirable personnel) can play a large role

in garnering local support. At the same time, those further from the facility may remain less familiar with the facility and perceive very little benefit from its operation. In that context, designing benefit packages such that citizens of the host state perceive broader benefits may be of importance in gaining robust public acceptance of UNF repositories.

Short Answer

How do critical design elements, such as the number of sites, types of facilities, retrievability of materials, research facilities, and options for reprocessing relate to public preferences for managing spent nuclear fuel?

While widely supportive of nuclear energy, most respondents generally remain uninformed or are misinformed about managing used nuclear fuel. Our surveys indicate no clear preference for a single concept for nuclear materials management and disposition, and latent support for multiple design concepts suggests that opinion has yet to mature. However, our data show that public receptivity to design and management options is influenced by specific facility attributes. Retaining the option for retrieval and reprocessing is favored by a two-to-one majority. Public receptivity also systematically increases when a base design is bundled with collocated research and/or reprocessing facilities. Host community compensation tends to increase policy support among those who are not initially opposed to siting the facility. Effects of proximity to repositories are not as simple as "not in my backyard" (NIMBY) assumptions might suggest. Though support generally wanes with closer proximity, significant fractions of participants in our survey report *increased* support with closer proximity. It is reasonable to assume such support may reflect calculations of benefits such as jobs, economic growth, and the addition of skilled and well-educated workers. This finding is supported by research on the evolution of public views and support/opposition to the Waste Isolation Plant in New Mexico.

Section 3.3: Trust in Institutional Sources of Technical Information

Regardless of functional attributes, bundled capabilities, or other concept and design features of nuclear repositories, the ways in which technical assessments and expert opinions about risks and benefits of

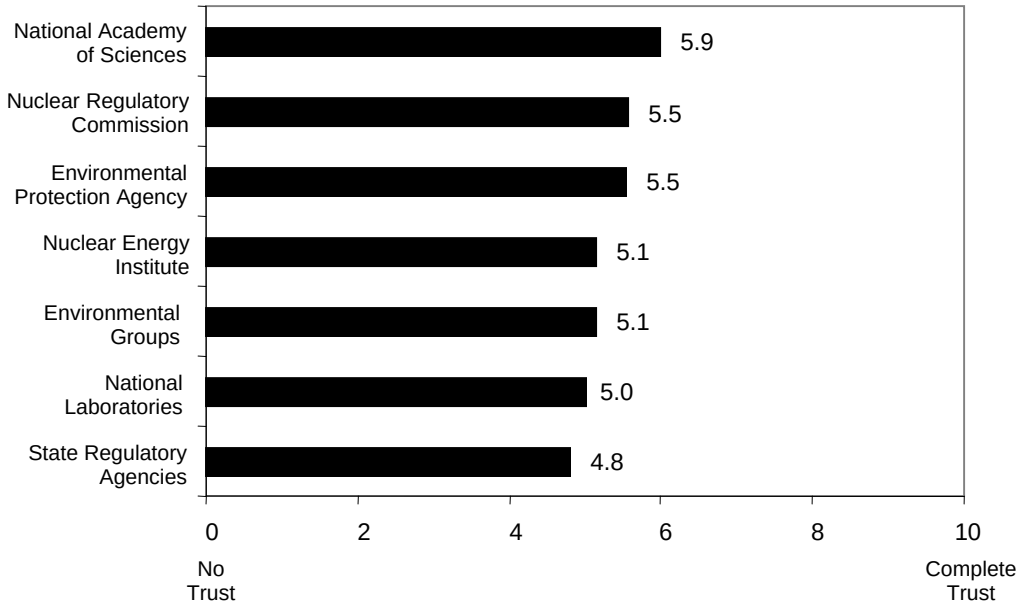
managing used nuclear fuel are presented to members of the public, and the trust with which they are received, can be crucial to public support or opposition. As previously noted, during the evolution of policy debates involving issues with complex technical components, advocacy groups can be expected to form among policy activists who typically marshal opposing technical information and expert opinions. As the policy debate matures and broadens, members of the mass public eventually must decide which groups and which experts are most credible and trustworthy. This section investigates two related dimensions of the trust issue. We compare relative levels of trust respondents place in seven institutional sources of information about managing used nuclear fuel, and then we ask participants to indicate the direction (if any) they think institutional bias may be expected.

We begin by posing the following questions about institutional trust.

> *Lead-in:* Managing spent nuclear fuel and other radioactive materials can be technically complex, and getting information you can trust is important. Using a scale from zero to ten, where zero means *no trust* and ten means *complete trust*, please indicate your level of trust in information provided by science and engineering experts from each of the following organizations. (random order)
>
> - The US Nuclear Regulatory Commission
> - The US Environmental Protection Agency
> - US government-owned energy and national security laboratories
> - The National Academy of Sciences
> - State regulatory agencies
> - Environmental advocacy groups, such as the National Resources Defense Council or the Sierra Club
> - The Nuclear Energy Institute, which represents the nuclear power industry

We compare mean levels of institutional trust in Figure 3.11.

Figure 3.11: Relative Mean Institutional Trust



The National Academy of Sciences receives the highest mean level of trust, followed by the Nuclear Regulatory Commission and the Environmental Protection Agency. To measure public perceptions of institutional bias, we ask the following:

> *Lead-in*: Now we want to know more about impressions you may have about how these organizations are likely to assess risks associated with managing radioactive materials, such as spent nuclear fuel. Using a scale from one to seven, where one means the organization is likely to *downplay* risks, four means the organization id likely to *accurately assess* risks, and seven means the organization is likely to *exaggerate* risks, please rate your impressions of how each organization is likely to assess risks. [The same seven institutions shown above are presented in random order.]

We compare percentages of respondents who judge the named institutions likely to downplay, accurately assess, and exaggerate risks in Table 3.7.

Table 3.7: Perceived Institutional Bias

Institution	Downplay Risks (%)	Accurately Assess Risks (%)	Exaggerate Risks (%)
National Academy of Sciences	19	**57**	24
Nuclear Regulatory Commission	38	**45**	18
Environmental Protection Agency	27	**39**	34
National Laboratories	**47**	33	19
State Regulatory Agencies	**42**	33	19
Nuclear Energy Institute	**55**	31	13
Environmental Groups	15	28	**57**

Only the National Academy of Sciences is perceived by a majority of our respondents as likely to accurately assess risks, while pluralities expect the Nuclear Regulatory Commission and the Environmental Protection Agency to accurate assess risks. As shown Figure 3.11, those three institutions also receive the highest levels of public trust. National laboratories and state regulatory agencies are perceived by pluralities as likely to downplay risks. Majorities of participants anticipate that the Nuclear Energy Institute is likely to downplay risks and that environmental groups are likely to exaggerate risks.

Short Answer

Q: What are the relative levels of public trust in technical information (such as risk assessments) provided by selected research, scientific, regulatory, and watchdog institutions in the United States, and what kinds of institutional biases do Americans perceive?

Of seven institutions specified, the National Academy of Sciences is most trusted to provide unbiased technical information and risk assessments. Federal institutions such as the Nuclear Regulatory Commission and the Environmental Protection Agency are rated above midscale in trust and perceived to be relatively unbiased. National laboratories, state regulatory agencies, and the Nuclear Energy Institute are perceived as likely to downplay risks, while environmental groups such as the Natural Resources Defense Council and the Sierra Club are perceived as likely to exaggerate risks.

Chapter Four

Nuclear Security

Our 2010 survey on nuclear security continues tracking public views on a range of issues we have been measuring through most of the post-Cold War era. In 2010, our measures are taken in the context not only of evolving security threats and conditions, but also in the context of evolving US nuclear security policy objectives. On April 5, 2009, in his speech delivered in Prague, Czech Republic, President Obama articulated five key objectives of US nuclear security policy: (a) reduce the role of nuclear weapons in US national security strategy; (b) negotiate a new Strategic Arms Reduction Treaty (START) with Russia; (c) seek a new treaty to verifiably end production of fissile materials for nuclear weapons; (d) strengthen the Nuclear Nonproliferation Treaty (NPT), and (e) secure vulnerable nuclear materials around the world within four years (Office of the Press Secretary, The White House 2009). Our survey inquires about public views and expectations regarding key elements of nuclear security and how those views fit US security objectives in 2010. We address the following three analytical questions in this chapter.

- For what purposes do members of the public judge US nuclear weapons to be relevant today?
- How are policy initiatives for nuclear arms control and reductions in the US nuclear arsenal viewed by ordinary Americans?
- How do respondents view prospects for eventual nuclear abolition, and how does the public rate the importance of retaining US nuclear weapons today?

Section 4.1: Relevance of Nuclear Weapons Today

As context for analyzing perceptions about the relevance of US nuclear weapons today, it is useful to compare perceptions of threats in today's environment with those of a period in which nuclear weapons played a more prominent security role. To provide a sense of how people perceive today's security environment relative to their retrospective assessments of the Cold War era, we ask participants to react to the two

contrasting statements shown in Table 4.1. The assertions are presented in random order, and participants are told that it is OK if they do not completely agree with either statement, but that we need to know with which statement they *most* agree.

Previously we presented these contrasting statements in surveys conducted in 1999 and in 2001; by posing them again in 2010, we gain comparative insight into how summary perceptions of world-wide dangers have evolved during the past decade. By using the Cold War era as a reference point, contemporary threat views are expressed relative to a period in which state-level nuclear threats were more prominent.

Table 4.1: Beliefs About the Security Environment

	1999	2001	2010
Today the world is a *less* dangerous place for the US than it was during the Cold War.	36%	24%	23%
Today the world is a *more* dangerous place for the US than it was during the Cold War.	64%	76%	77%

Of course neither statement addresses the nature of perceived threats that make the world dangerous for the US, and given the end of the Cold War, the demise of the Soviet Union, the liberation of Eastern Europe, and the rise of terrorism, it seems likely that the nature of those threats has evolved importantly. But the key point is that in 2010, more than three out of four respondents agree with the assertion that today's world is *more* dangerous for the US than was the Cold War era. That helps characterize public views of today's security environment as we inquire about perceptions of the contemporary relevance of US nuclear weapons.

Assessing the Importance of Nuclear Deterrence

Using the following three questions, we investigate the perceived importance of US nuclear weapons for deterring selected behaviors of other countries.

S18: Using a scale from zero to ten, where zero means *not at all important* and ten means *extremely important*, how important do you believe US nuclear

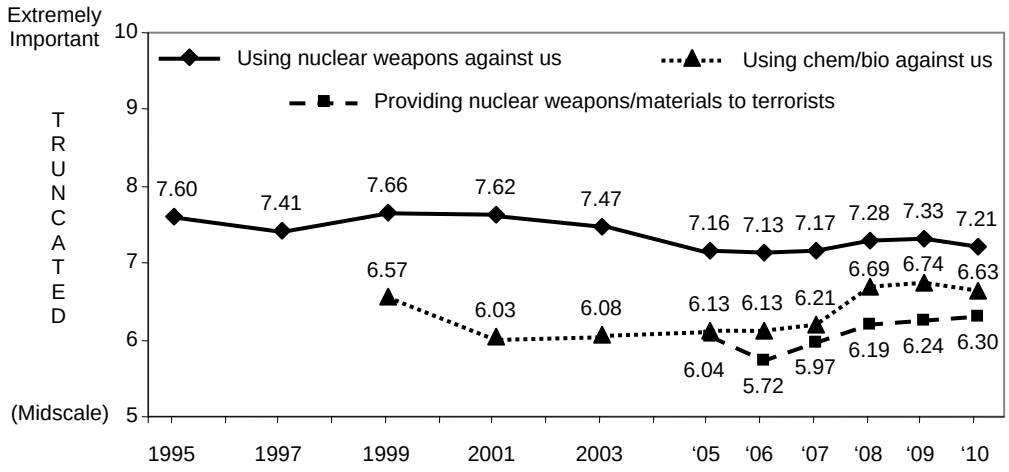
weapons are for preventing other countries from using nuclear weapons against us today?

S19: On the same scale from zero to ten, how important are US nuclear weapons for preventing other countries from providing nuclear weapons or nuclear materials to terrorists today?

S20: Using the same zero-to-ten scale, how important are US nuclear weapons for preventing other countries from using chemical or biological weapons against us today?

We chart trends in mean responses to each of the three questions in Figure 4.1.

Figure 4.1: Mean Importance of US Nuclear Weapons for Deterring Other Countries From …



Note that for display purposes the vertical axis has been truncated to show only the upper half of the scale, and that all means for each question are well above midscale. Notice also that not all questions were asked in each survey period. In 1995 we began asking the importance of US nuclear weapons for preventing other countries from using their nuclear weapons against us (solid line in Figure 4.1), and in 11 survey periods, mean responses have remained above a value of seven on a scale from zero (not at all important) to ten (extremely important). We expected to see this value drop over time in the post-Cold War period, but it has declined only about 5.1 percent thus far,[1] indicat-

[1] Though small in absolute terms, the 5.1 percent decrease in means is statistically significant ($p < .0001$).

ing that our participants continue to judge US nuclear weapons important for classic deterrence purposes, but that valuation is slowly declining. The dotted line shows mean importance assigned to US nuclear weapons for deterring countries from employing other weapons of mass destruction against us. While mean responses have varied somewhat since we began asking this question in 1999, the mean value in 2010 is statistically indistinguishable from that first recorded a decade earlier. We began asking the question about the importance of US nuclear weapons for deterring other countries from providing nuclear weapons or materials to terrorist groups in 2005, and since then, the mean assessed importance has increased a statistically significant 4.3 percent ($p = .0039$). These response patterns illustrate that public perceptions of the importance of US nuclear weapons for purposes of deterrence remain at high levels thus far into the post-Cold War era. They also show how ordinary Americans differentiate the importance of nuclear deterrence for different objectives.

To further investigate public differentiation of the efficacy of US nuclear deterrence, we shift our focus from deterring other states to deterring nonstate terrorist groups. Deterrence theory generally posits two requirements for effective nuclear deterrence. First, attribution to a high degree of certainty of who used nuclear or other mass casualty weapons must be likely, and second, unavoidable retribution that would be unacceptable to the initiator must be inescapable. The difficulties of determining the source of a nuclear weapon or nuclear materials employed by nonstate terrorist groups and the difficulties of holding at risk vital resources of such groups make deterring them problematic. To measure how ordinary Americans perceive the utility of nuclear deterrence of such groups, in 2008 we added the following questions to our series on the efficacy of nuclear deterrence.

> *Lead-in:* So far we have been asking you about deterring actions by other countries. Now we want you to consider the importance of US nuclear weapons for deterring terrorist groups that may have members from several different countries and may operate from multiple locations.
>
> - S21: Using the same scale from zero to ten, where zero means *not at all important* and ten means *extremely important*, how important are US nuclear weapons for preventing terrorist groups from using nuclear weapons against us today?

- S22: Again, on the same scale from zero to ten, how important are US nuclear weapons for preventing terrorist groups from using chemical or biological weapons against us today?

Mean responses to both questions have been near a value of six in all surveys since 2008.

In 2010, we add the two randomly ordered contrasting statements about this issue shown in Table 4.2 and asked participants to indicate with which assertion they most agree.

Table 4.2: Preventing Terrorist Groups From Using WMD Against Us

	2010
US nuclear weapons have very little if any utility for preventing non-state terrorist groups from using weapons of mass destruction against us because such groups have little of value for us to attack with our nuclear weapons.	49%
US nuclear weapons have great utility for preventing non-state terrorist groups from using weapons of mass destruction against us because our nuclear weapons deter other countries from providing weapons of mass destruction to terrorists.	51%

Opinion is almost evenly split, with about half agreeing that US nuclear weapons have very little utility and half agreeing that they have great utility for preventing terrorist groups from using weapons of mass destruction against us. In this case, the mechanism for preventing such acts is cast as deterring proliferation behaviors of other states, and does not indicate that our respondents believe terrorist groups will necessarily be deterred from using weapons of mass destruction after they have been acquired. In that sense, it is not a narrow measure of public beliefs about deterring terrorists, but rather is an indicator that participants believe nuclear deterrence may affect the behavior of those who might consider supplying WMD to terrorists. Nevertheless, substantial proportions of the public believe that US nuclear weapons remain important for preventing the use of weapons of mass destruction by terrorist groups—even if the role of deterrence is indirect.

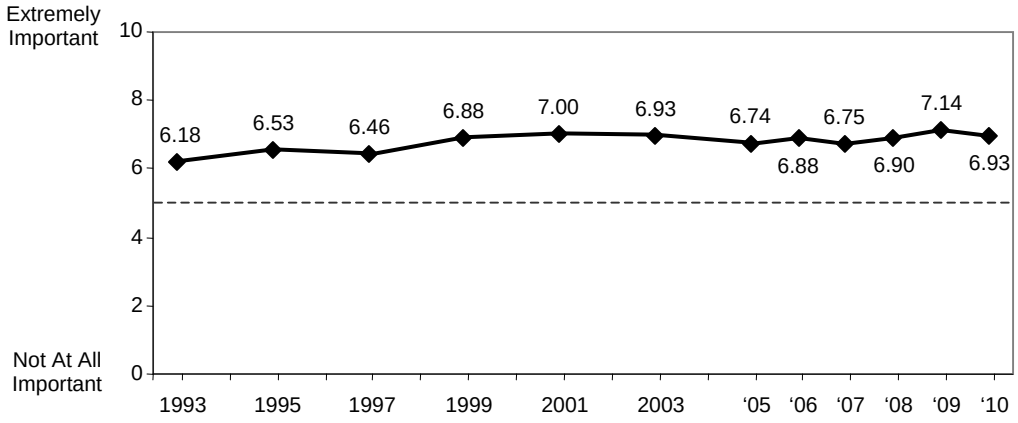
Importance of US Nuclear Weapons for Other Than Deterrence

To understand the degree to which our participants consider US nuclear weapons to have utility beyond deterrence purposes, we pose the following two questions. Again, each is answered on a scale from zero to ten, where zero means *not at all important* and ten means *extremely important*. We chart trends in mean responses in Figures 4.2 and 4.3.

S23: How important are nuclear weapons for maintaining US influence and status as a world leader?

S24: How important are nuclear weapons for maintaining US military superiority?

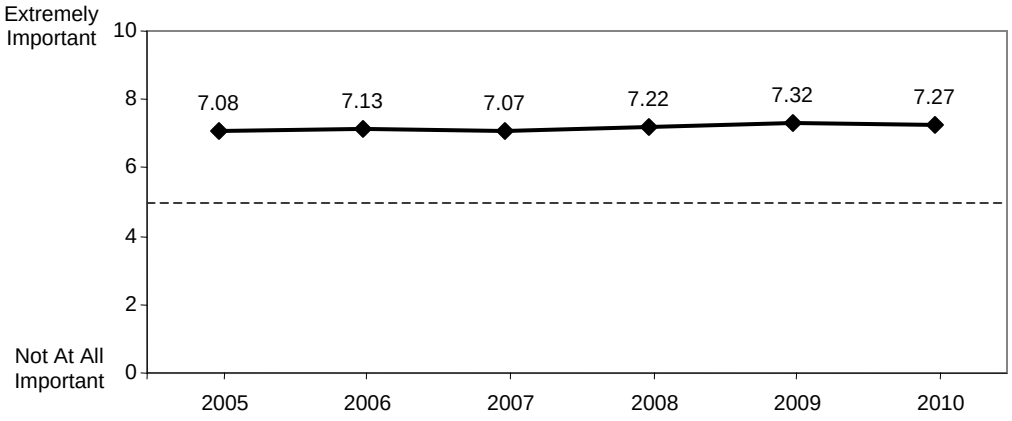
Figure 4.2: Mean Importance of Nuclear Weapons for US Influence and Status[2]



During the post-Cold War era from 1993 to 2010, mean judgments of the importance of nuclear weapons for maintaining US influence and status as a world leader remain well above midscale and increase a statistically significant 12.1 percent ($p < .0001$).

[2] The importance of nuclear weapons for US influence and status was asked using two separate questions from 1993 to 2003, and the means for those years represent values derived by averaging responses to both questions.

Figure 4.3: Mean Importance of Nuclear Weapons for US Military Superiority



Since we began asking this question in 2005, all mean responses have been above a value of seven on the zero-to-ten scale, and they have increased 2.7 percent, which is statistically significant (p = .0198).

To this point, we have reported on public beliefs about the value of US nuclear weapons for various deterrence objectives against states and non-state groups, and for non-deterrence purposes such as US influence, status, and military superiority. But none of these objectives have to do with the utility of nuclear weapons for war fighting. The utility of nuclear weapons for "winning" wars is generally devalued because the likely destruction that is fundamental to deterrence calculations seems so disproportionate that the actual use of nuclear weapons for fighting wars is broadly discounted. To see if our respondents share the views of most subject experts, we posed the two randomly ordered contrasting assertions in Table 4.3, again advising that it was not necessary to completely agree with either statement, but asking with which polar view participants most agreed. We compare percentages of respondents who most agreed with each statement in 1999, 2001, and 2010.

Table 4.3: Beliefs About Uses of Nuclear Weapons

	1999	2001	2010
US nuclear weapons have no use except for deterring others from using their nuclear weapons against us.	42%	40%	37%
US nuclear weapons are useful both for deterring others from using their nuclear weapons against us and for winning wars if necessary.	58%	60%	63%

While it is noteworthy that a majority of respondents in each survey period most agreed with the view that US nuclear weapons are useful for winning wars if necessary, it is perhaps even more interesting that the percentages of respondents reporting those beliefs has grown in each measurement period since this contrast was first presented in 1999. A decade later, those reporting beliefs that US nuclear weapons are useful for winning wars grew from 58 percent to almost two out of three respondents.

But measurements of public beliefs about the utility and assumed importance of features that might be considered benefits associated with US nuclear weapons lack counterbalancing beliefs about associated risks. To better understand how ordinary Americans' beliefs about benefits *and* risks might balance, we pose the contrasting statements in Table 4.4 in random order and again asked with which assertion participants most agree.

Table 4.4: Beliefs About Weighing Risks and Benefits of US Nuclear Weapons

	1999	2001	2010
The US nuclear arsenal deters attacks and ensures our security, and these *benefits* far outweigh any *risks* from US nuclear weapons.	73%	79%	73%
The US nuclear arsenal threatens civilization and cannot be managed safely, and these *risks* far outweigh any *benefits* from US nuclear weapons.	27%	21%	27%

When asked to consider benefits *and* risks, almost three out of four participants since 1999 report that perceived benefits of US nuclear weapons outweigh perceived risks.

Short Answer

Q: For what purposes do members of the public judge US nuclear weapons to be relevant today?

In the views of most of our respondents, US nuclear weapons remain relevant today for deterring other countries from using nuclear or other weapons of mass destruction against US interests or those of our allies and for deterring other countries from providing nuclear weapons or nuclear materials to terrorist groups. Opinion is almost evenly divided about the importance of US nuclear weapons for preventing non-state terrorist groups from using weapons of mass destruction against us, with those perceiving utility basing assessments largely on deterring other states from making nuclear weapons or materials available to such groups. Most participants also value nuclear weapons for maintaining US influence, status, and military superiority. Almost two out of three participants believe that should war become unavoidable, US nuclear weapons could be important for "winning," and roughly three out of four respondents judge the benefits of US nuclear weapons to outweigh associated risks. These kinds of assessments suggest that the nuclear dimensions of security continue to be firmly ingrained in public understandings of overall national security.

Section 4.2: Nuclear Arms Control

As noted in the introduction to this chapter, the revitalized interest in nuclear arms control evidenced by the Obama administration includes ratifying a new Strategic Arms Reduction Treaty (START) and a Comprehensive Test Ban Treaty, negotiating a new treaty to limit production of fissile materials that could be used in nuclear weapons, strengthening the Treaty on the Non-proliferation of Nuclear Weapons (NPT), and securing existing stocks of fissile materials. In 2010, we investigate public receptivity and support for or opposition to these measures.

New Strategic Arms Reductions Treaty (START)

We begin by reporting responses in Table 4.5 to a straightforward up or down question on ratifying the new START agreement with Russia. We

show results for all respondents and for three groups defined by self-identified partisanship: Democrats, independents, and Republicans.[3]

> S31a: The new arms control treaty recently signed by the Presidents of the US and Russia that agrees to reduce each country's number of ready-to-use, long-range nuclear weapons to 1,550 does not go into effect until it is ratified by the US Senate and Russia's legislature. How do you want your senator to vote?

Table 4.5: Ratifying New START

2010	% Yes: Ratify Treaty	% No: Reject Treaty
All	**76**	**24**
Democrats	85	15
Independents / moderates	79	21
Republicans	61	39

A majority of all respondents, regardless of political partisanship, favor ratifying the new START agreement, but support clearly is conditioned by political orientation, with Democrats supporting ratification by a 24 percent margin over Republicans. Those identifying only slightly with either major party, plus political independents and those with no party identification, fall between the two major party groups.

Comprehensive Test Ban Treaty

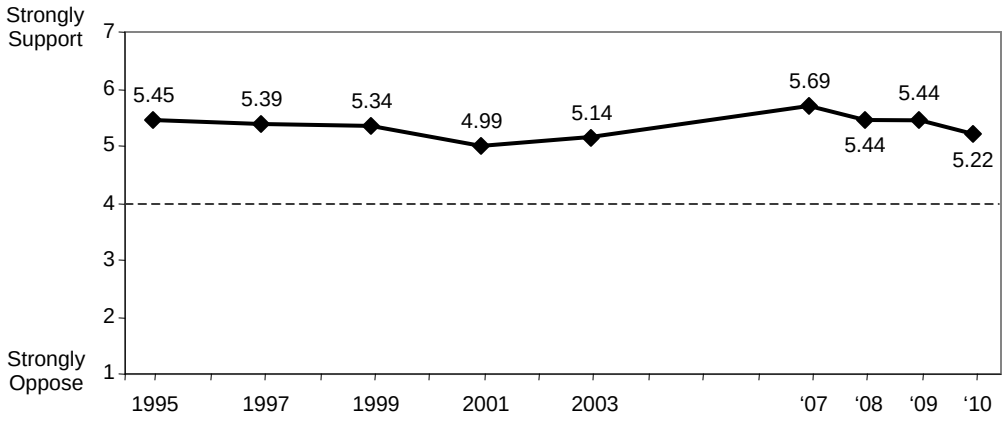
Since 1995, we periodically have asked the following question to help gage public views on a comprehensive nuclear test ban agreement.

> S28: Using a scale from one to seven, where one means *strongly oppose* and seven means *strongly support*, how do you feel about the US participating in a treaty that bans all nuclear test explosions?

[3] Based on self-reported identification with the Democratic and Republican parties and scaled levels of associational intensity, we create three groups as follows: (a) those identifying "completely" or "somewhat" with the Democratic Party are grouped as Democrats; (b) those identifying slightly with the Democratic Party, political independents, those identifying with no party, and those identifying slightly with the Republican Party are grouped as independents/moderates; and (c) those identifying "completely" or "somewhat" with the Republican Party are grouped as Republicans.

In Figure 4.4, we plot mean responses.

Figure 4.4: Support for a Comprehensive Nuclear Test Ban Treaty



Mean responses for all survey periods in which we have asked this question are well above midscale, and with one exception in 2001 (immediately following 9/11), they are above a value of five on the one-to-seven scale.[4] Again, though support is widespread, it is conditioned by political partisanship, with Democrats in 2010 reporting a mean of 5.72, independents/moderates reporting a mean of 5.20, and Republicans responding with a mean of 4.61. Differences in means among all pairings of the three partisan groups are statistically significant ($p < .0001$).

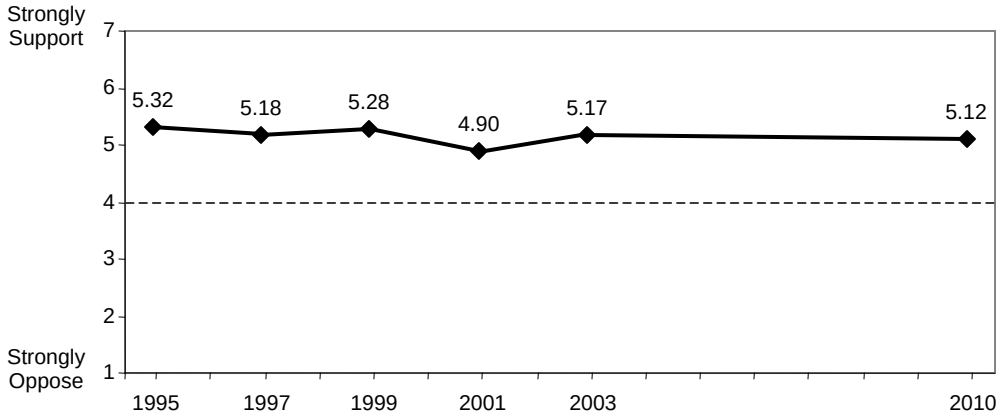
Fissile Material Cutoff Treaty

We measure support and opposition for a treaty banning production of fissile materials that could be used for nuclear weapons by posing the following question, the mean responses for which are charted in Figure 4.5.

> S29: On the same scale from one to seven, where one means *strongly oppose* and seven means *strongly support*, how do you feel about the US participating in a treaty that bans production of nuclear materials that could be used to make nuclear weapons?

[4] This question was not asked in the years between 2003 and 2007.

Figure 4.5: Support for a Fissile Material Cutoff Treaty



Here, too, support for a fissile material cutoff treaty is well above midscale and has been sustained at similar levels since we first measured it in 1995.[5] And again, political partisanship conditions mean support in predictable ways: Democrats = 5.49; independents/moderates = 5.09; Republicans = 4.70; differences in means all are statistically significant.[6]

Treaty on the Non-proliferation of Nuclear Weapons (NPT)

Public support for the formally titled Treaty on the Non-proliferation of Nuclear Weapons is generally known to be wide and persistent. The single aspect of the NPT that is most controversial is Article VI which reads as follows:

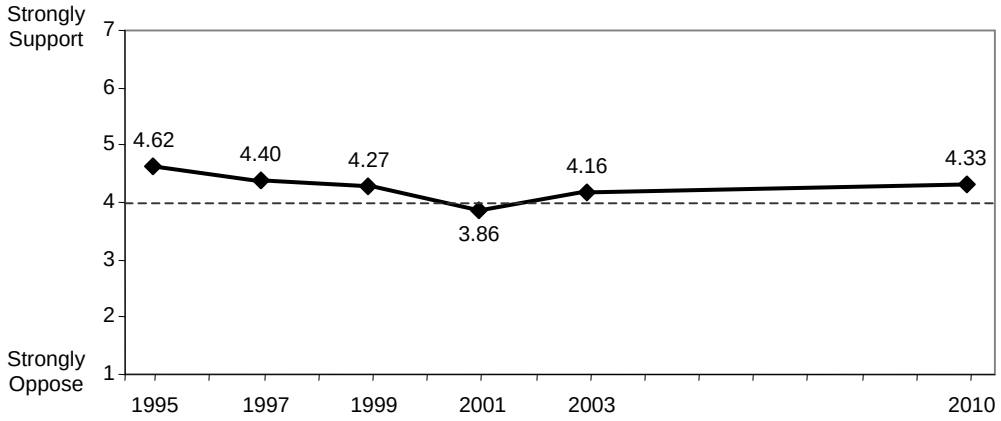
> "Each of the Parties to the Treaty undertakes to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a Treaty on general and complete disarmament under strict and effective international control."

To sample public views on this provision, we pose the following question; mean responses are displayed in Figure 4.6.

[5] This question was not asked in the years between 2003 and 2010.
[6] Democrats vs. independents: $p = .0002$; independents vs. Republicans: $p = .0041$; Democrats vs. Republicans: $p < .0001$.

S30: Again, using the same scale from one to seven, where one means *strongly oppose* and seven means *strongly support*, how do you feel about the US agreeing to a provision that requires us to eventually eliminate all of our nuclear weapons?

Figure 4.6: Mean Support for NPT Requirement to Disarm



Mean support for complying with Article VI of the NPT requiring the eventual elimination of all nuclear weapons and complete disarmament is above midscale in each measurement period except that immediately following the 9/11 terrorist attacks.[7] Unsurprisingly, mean support is statistically significantly differentiated in 2010 by political partisanship: Democrats = 4.85; independents/moderates = 4.43; Republicans = 3.42. Here, too, differences in all means are statistically significant.[8]

Outlook for Future Reductions in Nuclear Arms

The data summarized above show broad public support for arms control initiatives and a formal treaty reducing the numbers of US nuclear weapons. Next we look at public views on minimum acceptable levels of strategic nuclear weapons to indicate how public support may vary at different nu-

[7] This question was not asked in the years between 2003 and 2010.
[8] Democrats vs. independents: $p = .0015$; independents vs. Republicans: $p < .0001$; Democrats vs. Republicans: $p < .0001$.

merical levels as the US nuclear arsenal is reduced. Is there a point at which public opposition to reductions may increase?

In 2008 and 2009 (before the new START was negotiated), we presented the following randomly ordered arguments about nuclear arms reductions and asked the following question about the minimum acceptable numbers of US strategic nuclear weapons in the context of mutually verifiable reductions on the part of Russia.

> Some people argue that since the end of the Cold War, US nuclear weapons have become much less important for our security and that of our allies. They argue that the US needs only a few hundred strategic nuclear weapons to prevent other countries or terrorist groups from using nuclear weapons against us or our key allies that do not have nuclear weapons such as Germany, Japan, and South Korea. They think money spent on maintaining a large US nuclear arsenal should be substantially reduced.
>
> Some people argue that because nuclear weapons have spread to other countries such as India, Pakistan, and possibly North Korea, and because Iran and some terrorist groups may be seeking nuclear weapons, it would be unwise for the US to reduce below 1,700 operationally deployed strategic nuclear weapons currently agreed to with Russia. They think money spent on the US nuclear arsenal must be sustained to prevent others from using nuclear weapons against us, and to reduce the need for our key allies to develop nuclear weapons of their own.
>
> - Assuming zero is the minimum number and 2,200 is the maximum number, how many operationally deployed strategic nuclear weapons do you think the United States needs to prevent other countries or terrorist groups from using nuclear weapons against us and our key allies?

By the time of our survey in 2010, the new START agreement was complete and awaiting Senate ratification. We again presented the same two arguments, but the maximum number of 2,200 mentioned in one of the arguments was reduced to 1,550 to comply with provisions of new START. We then pose the following very similar question.

> S31: Assuming zero is the minimum number and 1,550 is the maximum number, how many ready-to-use, long-range nuclear weapons do you think the United States needs to prevent other countries or terrorist groups from using nuclear weapons against us and our key allies?

In Figure 4.7, we compare distributions and mean responses recorded in 2008 and 2009. In Figure 4.8, we show the distribution and mean response to our question as revised in 2010. Note that in 2008 and 2009, verbatim responses were limited to the range of 0–2,200, and in 2010, verbatim responses are limited to the range of 0–1,550.[9]

Figure 4.7: Preferred Number of Operationally Deployed US Strategic Nuclear Weapons: 2008–2009

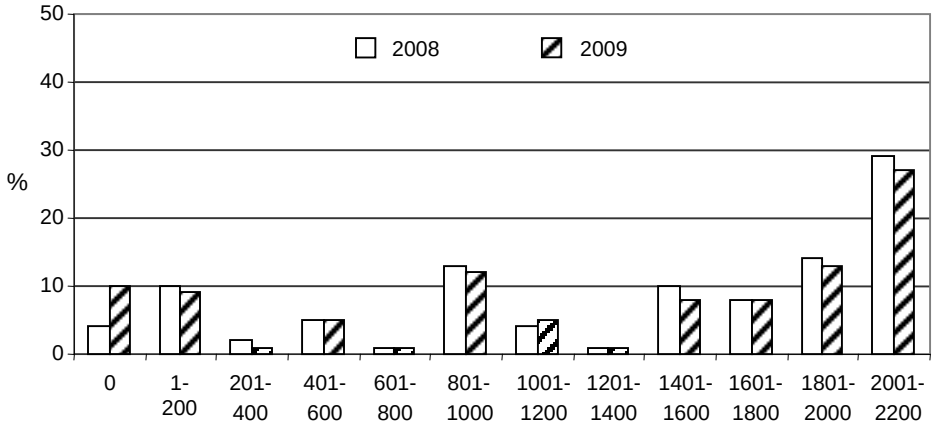
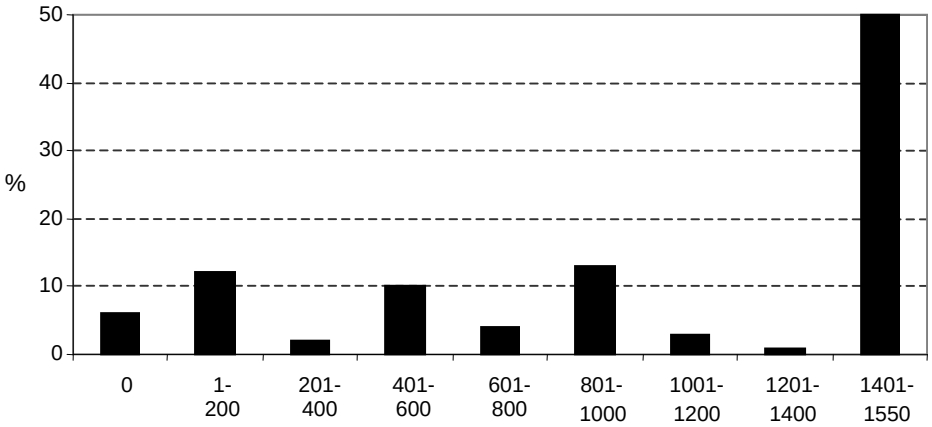


Figure 4.8: Preferred Number of Ready-to-Use, Long-Range US Nuclear Weapons: 2010



[9] It is our experience from similar questions fielded in earlier surveys that if no upper limit is enforced, some respondents' preferences will greatly exceed existing or planned inventories. Such outliers skew central tendencies, so to prevent unrealistically high numbers, we bound the upper range to existing or pending arms agreement limits.

In Figure 4.7, when the imposed upper limit is 2,200, the median range for 2008 is 1,700 and the mean is 1,425. By 2009, with the same upper limit of 2,200, the median range decreases to 1,500 and the mean to 1,342. In Figure 4.8, when the imposed upper limit is 1,550, the median range is 1,042, and the mean is 1,300. Note in Figure 4.8 the stacking that occurs at the highest available value: 50 percent of our respondents in 2010 choose a value within the range of 1,401 to 1,550. Distributions in 2010 below the upper limit more closely approximate those recorded in the two prior years. These substantive differences in distribution patterns at the upper limits suggest that public resistance to going below the maximum allowed range in the new START agreement may increase as numbers of these kinds of weapons are reduced toward zero.

To further explore views on continued future reductions, we ask participants to respond to five randomly ordered policy statements on a scale from one (strongly disagree) to seven (strongly agree). In Table 4.6 we show each assertion and its mean response value in 2010.

Table 4.6: US Nuclear Stockpile Policy Options

1 = Strongly Agree—7 = Strongly Disagree	Means 2010
S32: The US should decrease the numbers of ready-to-use, long-range nuclear weapons below the planned minimum of 1,550 if Russia agrees to similar reductions that are verifiable.	4.16
S33: The US should continue to reduce the numbers of ready-to-use, long-range nuclear weapons below 1,550, even if Russia does not.	2.91
S34: The US should not reduce the level of its nuclear stockpile below the level of any other country.	5.13
S35: Having large numbers of nuclear weapons is no longer necessary. As long as we have a few dozen nuclear weapons, we can prevent others from using nuclear weapons against us and our key allies.	3.51
S36: Regardless of what others do, the US should eliminate all its nuclear weapons as soon as possible. This would put the US in a position of moral leadership by setting an example for others; it would bring the US into compliance with a key objective of the Nuclear Nonproliferation Treaty; and it would make the world safer.	2.72

Mean responses suggest that participants are open to reducing below 1,550 ready-to-use, long-range nuclear weapons if Russia agrees to matching reductions that are verifiable, but most do not want the US to have a smaller nuclear arsenal than any other country. Mean support is well below mid-scale (indicating substantial opposition) for reducing US nuclear weapons unilaterally, and most participants oppose proposals for very low numbers approaching zero.

Short Answer

Q: How are policy initiatives for nuclear arms control and reductions in the US nuclear arsenal viewed by ordinary Americans?

About three out of four respondents want the new Strategic Arms Reductions Treaty with Russia to be ratified. Most participants also indicate strong support for a comprehensive nuclear test ban and a fissile material cutoff agreement, but that support is conditioned by ideology and partisanship, with those on the political left supporting nuclear arms control initiatives much more strongly than those on the political right. While the NPT continues to enjoy substantial support, opinion is roughly divided about complying with the provisions of Article VI requiring the US eventually to disarm. (We explore public attitudes on prospects for nuclear abolition in the following section.) When asked to indicate the minimum acceptable number of ready-to-use, long-range US nuclear weapons within a numerical range of 0–1,550, the modal grouped response in 2010 is 1,401–1,550; the median is 1,042; and the mean is 1,300. Most participants are open to reducing below 1,550 if Russia agrees to matching verifiable reductions. Substantial opposition is evident for unilateral reductions and reductions to very low numbers approaching zero.

Section 4.3: Nuclear Abolition

Nuclear disarmament has been one of the stated long-range goals of almost all presidents in the nuclear age, but President Obama is the first president to make it a centerpiece of American defense policy. His efforts have been preceded or supported by other serious policy leaders and former officials. About two-thirds of living former US secretaries of state and defense and national security advisors have endorsed the elimination of

nuclear armaments worldwide. Similar proponents can be found among foreign statesmen, including former presidents, prime ministers, ministers of foreign affairs, and defense ministers. Numerous retired senior military officers in the US and abroad also have lent support to the notion of a world without nuclear weapons. In the prior section, we reported widespread support for several nuclear arms control initiatives. In this section, we explore public attitudes on the ultimate goal of nuclear arms control—abolition.

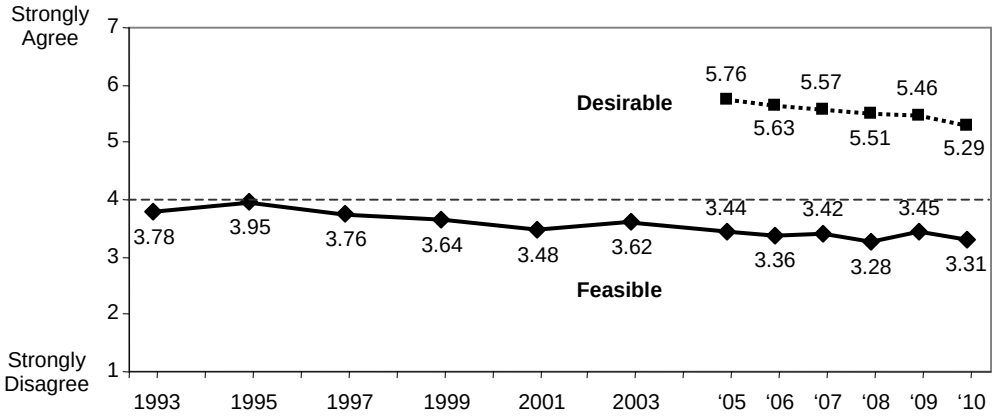
When assessing public views on nuclear abolition, it is important to examine two separate but related dimensions. One is the *desirability* of a world free of nuclear weapons: Would it be safer, or would large-scale "world" wars again become likely? The second conceptual dimension is the *feasibility* of nuclear abolition. In a world in which few formal enforcement mechanisms above state sovereignty exist without the formation of willing coalitions among states on a case-by-case basis, how could abolition be enforced and verified? Also complicating the feasibility issue is the fact that scientific and technical knowledge of how to make nuclear explosives is widely spread throughout the world, and so are the required technologies and materials. Advocates of nuclear abolition tend to emphasize the desirability dimension, while those who oppose tend to argue that abolition is infeasible. To probe these key dimensions of public beliefs, we pose the following two assertions in random order and ask participants to respond on a scale from one to seven where one means *strongly disagree* and seven means *strongly agree*.

> S25: It is *feasible* to eliminate all nuclear weapons worldwide within the next 25 years.
>
> S26: It is *desirable* to eliminate all nuclear weapons worldwide within the next 25 years.

We chart trends in mean responses in Figure 4.9.[10]

[10] We began posing the assertion about feasibility in 1993, and we have tracked responses to the desirability assertion since 2005. Prior to 2005, we employed a differently worded assertion that does not afford direct comparisons.

Figure 4.9: Assessing Mean Feasibility / Desirability of Nuclear Abolition



Three key points can be drawn from the trends shown in Figure 4.9. First, all mean responses to the assertion that it is desirable to eliminate all nuclear weapons are above a scale value of five, indicating that most respondents agree with that assertion. Second, all mean responses to the assertion that it is feasible to eliminate all nuclear weapons are below midscale, indicating disagreement. Differences in means between the two statements in each year between 2005 and 2010 are statistically significant ($p < .0001$). Finally, responses to each statement are trending downward, indicating declining levels of agreement with both assertions. Between 1993 and 2010, mean agreement with the assertion that nuclear abolition is feasible declined 12.4 percent ($p < .0001$), and between 2005 and 2010, agreement with the assertion that nuclear abolition is desirable declined 8.2 percent ($p < .0001$).

In 2010, we return to the feasibility issue by posing the two randomly ordered contrasting statements in Table 4.7 and asking participants with which statement they most agree.

Table 4.7: Contrasting Views of the Possibility of Nuclear Abolition

	2010
It is possible to abolish all nuclear weapons worldwide if the US carefully negotiates with other countries to gradually reduce the numbers of nuclear weapons to zero.	20%
While gradual reductions in the numbers of nuclear weapons may be beneficial, it will not be possible to convince all countries to abolish all nuclear weapons.	80%

Responses to the feasibility issue when posed in either format suggest that most of our respondents do not believe the long-term goal of nuclear abolition can be achieved in the foreseeable future.

In 2010 we also further probe the desirability issue by posing the two randomly ordered assertions in Table 4.8 about the effects of a world without nuclear weapons. Again, participants are asked with which statement they most agree.

Table 4.8: Contrasting Views of a World Without Nuclear Weapons

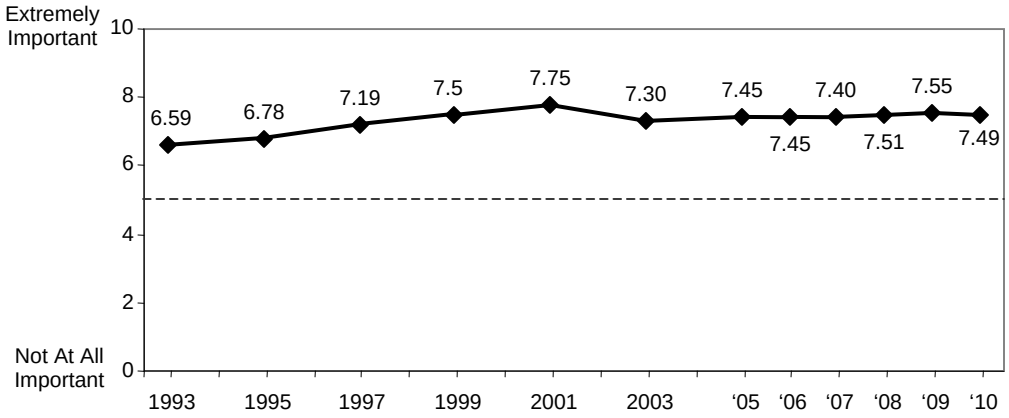
	2010
A world without nuclear weapons would be safer than today because the destructive power of nuclear weapons would no longer be a threat.	54%
A world without nuclear weapons would be more dangerous than today because countries could again conduct large-scale wars like World Wars I and II to settle disputes.	46%

Opinion is split on the issue of whether a nuclear weapons-free world would be safer than today, with a majority of 54 percent agreeing with that assertion, and 46 percent disagreeing.

We close this section by showing the trend in responses to the following question on the importance of retaining US nuclear weapons today. First asked in 1993, just 18 months after the collapse of the Soviet Union and the end of the Cold War, we have asked the same question in each subsequent survey, and Figure 4.10 shows the trend in mean responses.

> S27: Using a scale from zero to ten, where zero means *not at all important* and ten means *extremely important*, how important is it for the US to retain nuclear weapons today?

Figure 4.10: Mean Importance of Retaining US Nuclear Weapons



We expected to chart a declining trend in importance over the course of the early years of the post-Cold War era. Instead, in the judgment of the American people, the mean importance of retaining US nuclear weapons grew by 13.7 percent ($p < .0001$), with all means near or above a value of seven on the zero-to-ten scale.

When these data are considered in conjunction with beliefs about nuclear abolition reported in the prior section, it seems clear that while many Americans may think a nuclear weapons-free world is desirable, most of those we have surveyed are highly skeptical that it can be accomplished, and they consider retaining some number of US nuclear weapons to be very important. These findings suggest that continued reductions to very low numbers and eventually to nuclear abolition will require policymakers to clearly and persuasively communicate how US security can be assured without nuclear weapons and to convince the American public that eliminating all nuclear weapons is a feasible and preferred strategic policy.

Short Answer

Q: How do respondents view prospects for eventual nuclear abolition, and how does the public rate the importance of retaining US nuclear weapons today?

Opinion is divided on whether a world without nuclear weapons would be safer or more dangerous, but a majority of respondents think it is desirable. However, opinion is much less divided about whether nuclear abolition is possible, with roughly eight in ten respondents judging it to be infeasible. The trend in agreement that it is desirable to eliminate all nuclear weapons is downward, with the mean decreasing about eight percent since 2005. The trend in mean judgments of the feasibility of nuclear abolition also is downward, having declined about 12 percent between 1993 and 2010. Mean rated importance of retaining US nuclear weapons increased nearly 14 percent during the same period. These trends suggest that while public support for reducing the numbers of nuclear weapons is widespread (as reported in Section 4.2), completely eliminating all nuclear weapons is conceptually a different issue that does not enjoy similar levels of public support. Pursuit of nuclear-zero will require careful attention to persuading the American people that it can be done without harming US security.

Chapter Five

Security From Terrorism

Now we turn to the threat of terrorism and US efforts to prevent it. We address the following three analytical questions.

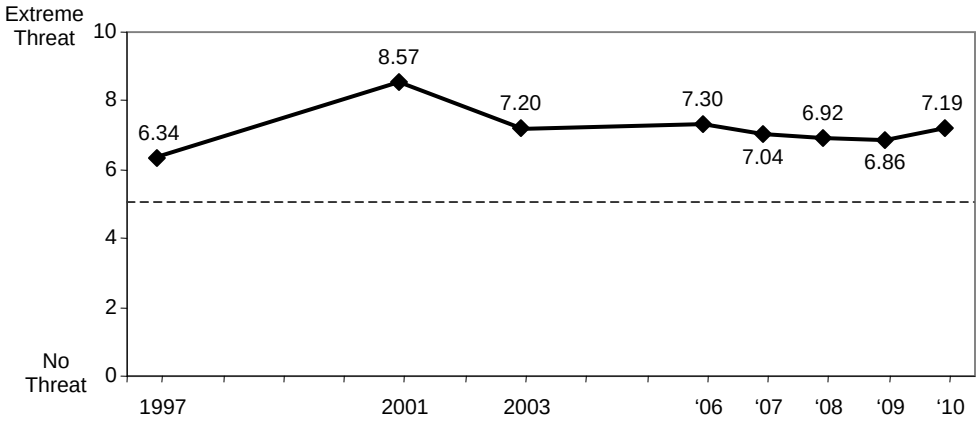
- How have public views of the threat of terrorism evolved since 9/11?
- How do Americans assess progress in the US struggle against terrorism to date, and what is the outlook for the future?
- How are public views of intrusive domestic measures to prevent terrorism evolving, and what key factors help shape those attitudes?

Section 5.1: Evolving Public Views of Terrorist Threats

We began asking an omnibus question about the overall threat of terrorism in the US in 1997, which provides a baseline against which to compare measures after the seminal events of 9/11. Beginning in 2008, we added a battery of additional questions about specific dimensions of terrorist threats in the US and elsewhere and a question on the future outlook. In Figure 5.1, we show the trend in mean responses to the following centerpiece question for which we have the greatest amount of trend information.

> *Lead-in*: For the following questions, please consider both the *likelihood* of terrorism and its potential *consequences*. Each is answered on a scale from zero to ten, where zero means *no threat* and ten means *extreme threat.*
>
> S54: Focusing specifically on our own country, and considering both foreign and domestic sources of terrorism, how do you rate the threat of all kinds of terrorism in the *United States* today?

Figure 5.1: Mean Threat of Terrorism of All Types in the US Today



In 1997, long before the 9/11 attacks, the mean threat of terrorism in the US was assessed at 6.34 on the zero-to-ten scale. Our measurement in 2001 occurred immediately following the attacks of 9/11, and, understandably, it was substantially higher, providing a peak mean of 8.57.[1] Since that time, mean assessments have declined appreciably, but remain significantly above our 1997 baseline ($p < .0001$). The declining trend between 2006 and 2009 turns upward again in 2010, perhaps reflecting the effects of several attempted (though unsuccessful) attacks such as the airline bombing attempt of December 25, 2009, and the failed Times Square car bombing on May 1, 2010, and other plots that were disrupted before attacks were attempted. Our latest measurement represents an increase of 13.4 percent from the baseline in 1997 ($p < .0001$).

Beginning in 1998, we added the following seven questions to this series, addressing the worldwide threat, specific dimensions of the threat in the US, and how the threat of terrorism is expected to change in the next decade. Each is answered on the same scale from zero (no threat) to ten (extreme threat). These questions, plus the previous inquiry, are presented in random order.

- S53: Remembering to consider both the *likelihood* and potential *consequences*, how do you rate the overall threat of terrorism of all types throughout the *world* today?

[1] This question was not asked in the years between 1997 and 2001.

- S55: Narrowing our focus to the threat of *nuclear* terrorism, how do you rate the threat of terrorists creating a nuclear explosion in the United States today?

- S56: So-called "dirty" bombs are devices that use conventional explosives to scatter radioactive materials. How do you rate the threat of terrorists using a dirty bomb in the United States today?

- S57: Biological devices are used to spread biological agents such as germs and viruses. How do you rate the threat of terrorists using a biological device in the United States today?

- S58: Chemical terrorism could result from terrorist attacks on US chemical installations or by terrorists purposely dispensing dangerous chemical agents. How do you rate the threat of chemical terrorism in the United States today?

- S59: How do you rate the threat of suicide bombings by terrorists in the United States today?

- S60: Turning now to the future, how do you rate the overall threat of terrorism to the United States in the next ten years?

In Table 5.1, we compare mean responses for each of the added questions in the three measurement periods, arranged from highest to lowest in 2010. The statistical significance of differences in means tests comparing 2008 and 2010 values are shown as *p* values in the final column.

Table 5.1: Mean Dimensions of the Threat of Terrorism: 2008–2010

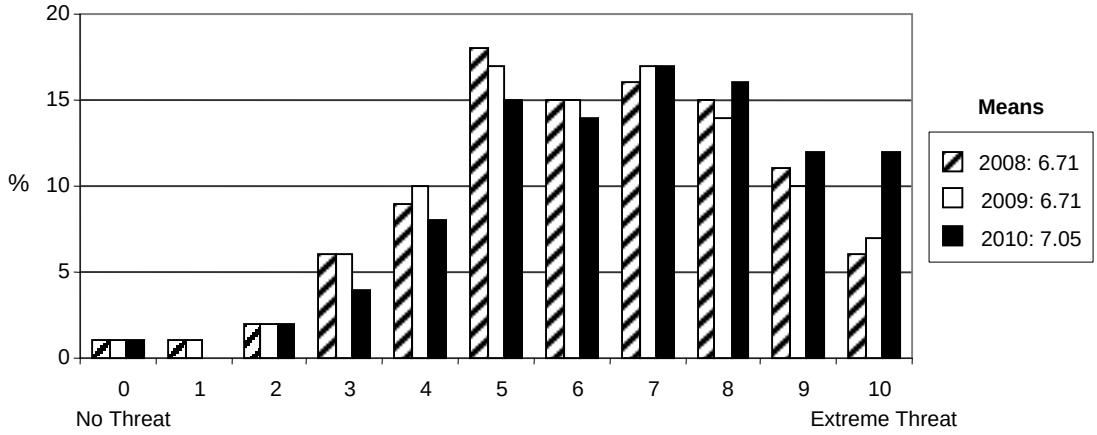
	2008	2009	2010	*p*-Value
Terrorism of all types in US in next 10 years	7.24	7.18	7.57	< .0001
Terrorism of all types throughout world today	7.61	7.47	7.55	.4434
Suicide bombings in US today	6.58	6.57	6.93	.0002
Biological device in US today	6.72	6.81	6.62	.2742
Chemical terrorism in US today	6.65	6.71	6.58	.4771
Dirty bomb in US today	6.44	6.44	6.43	.9236
Nuclear explosion in US today	5.54	5.75	5.47	.4845

Three of our terrorism measures show statistically significant increases in mean assessments between 2008 and 2010: overall assessments of the threat of

terrorism in the US today (Figure 5.1) and in the next decade each increased significantly, as did the perceived threat of suicide bombings in the US. While means for some individual dimensions of the terrorism threat decline slightly in absolute terms, none of the decreases are statistically significant.

By averaging responses to our omnibus measure in Figure 5.1 with answers to the seven added measures introduced in 2008, we create a terrorism threat index for which distributions of responses and mean values are shown in Figure 5.2.

Figure 5.2: Terrorism Threat Index



The increase in the mean index value for 2010, compared to 2008 or 2009 is statistically significant ($p < .0001$), suggesting that public threat perceptions are sensitive to recent terrorist activities, especially within the US. Also, public assessments are conditioned importantly by demographics and ideology, with threat perceptions increasing with age and political conservatism and among women, but declining with increasing education levels.

Short Answer

Q: How have public views of the threat of terrorism evolved since 9/11?

Mean public assessments of the overall threat of terrorism of all kinds in the US peaked immediately after 9/11 and have declined about 16 percent since 2001, but they remain well above pre-9/11 assessments. Public perceptions are predictably sensitive to recent events, and appear to respond even to at-

tempted attacks that are not successful. Expectations are that the overall threat of terrorism in the US will increase in the future, especially the threat of suicide bombings. Terror threat assessments increase with age, political conservatism, and among women, and they decrease with education.

Section 5.2: Assessing Progress in the Struggle Against Terror

In this section we report trends in several measures of public perceptions of US efforts to prevent and combat terrorism, including: (a) overall progress in the "war on terrorism"; (b) confidence in US abilities to accurately assess threats of terrorism and prevent such acts; (c) confidence in US capabilities to respond to large-scale terrorist attacks in the US; and (d) assessments of ongoing efforts to improve security at US airports, seaports, and land borders.

We begin with the following two overview questions that track mean assessments of overall US effectiveness in the struggle against terrorism and public confidence in eventually prevailing.

> S68: On a scale from zero to ten, where zero means *not at all effective* and ten means *extremely effective*, how effective, overall, do you believe US efforts in the war on terrorism have been thus far?
>
> S61: Using a scale from zero to ten, where zero means *not at all confident* and ten means *extremely confident*, how confident are you that we will eventually win the war on terrorism?

We chart trends in mean responses since 2003 in Figures 5.3 and 5.4.

Figure 5.3: Mean US Effectiveness in War on Terrorism

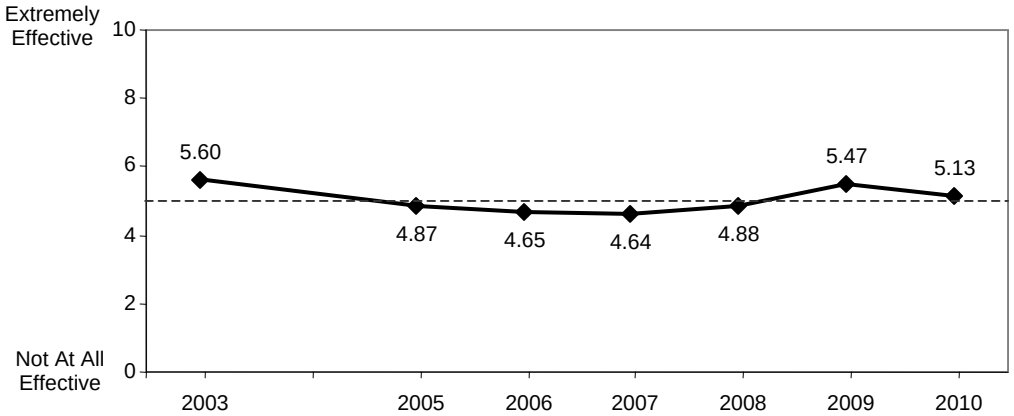
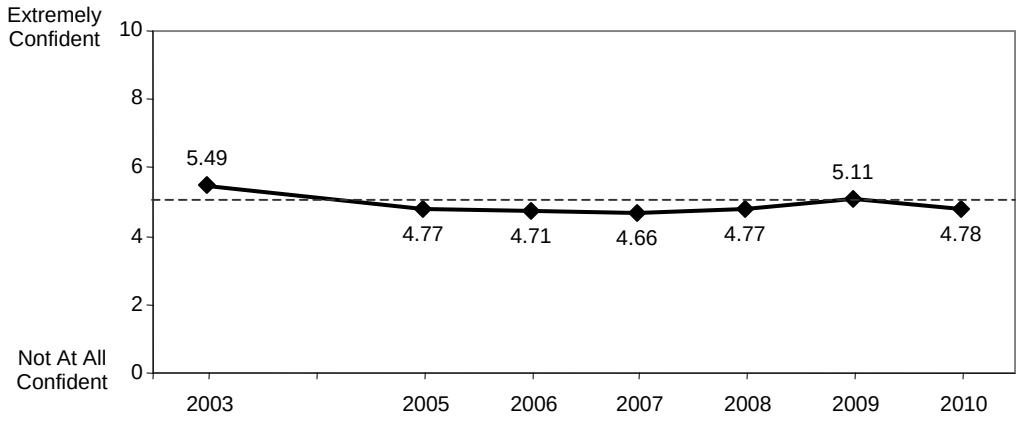


Figure 5.4: Mean Confidence in Eventually Winning War on Terrorism

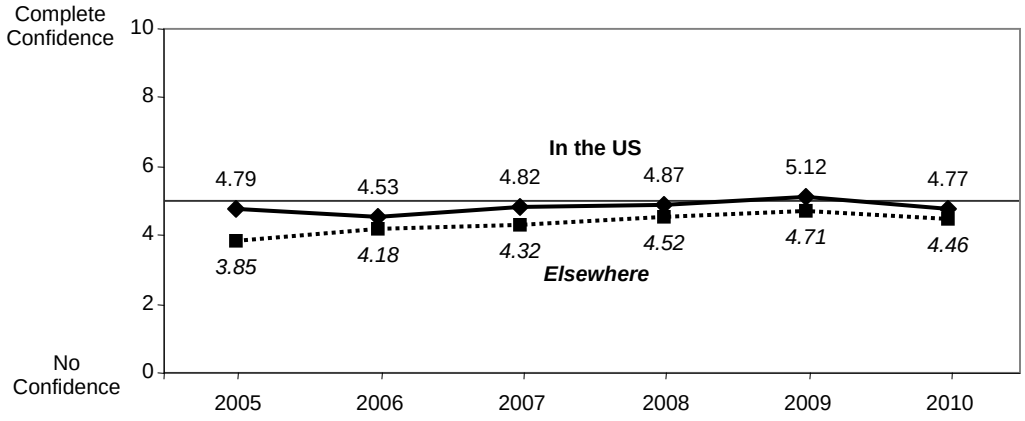


Mean judgments of our respondents about US effectiveness in the struggle against terrorism have declined 8.4 percent since 2003. In a similar trend, mean confidence in "winning" the struggle has declined 12.9 percent over the same period. These response patterns near midscale suggest that most participants are neither optimistic nor pessimistic about US progress in combating terrorism. We find neither unrealistic expectations nor pent-up frustrations that might undercut public support for continuing the struggle. Public resignation to the difficulties and long-term nature of the US struggle with terrorism may underlie these attitudes and outlooks.

We further probe perceptions of US capabilities to understand and predict the threat of terrorism with the following two questions, and we show trends in mean responses to each in Figure 5.5.

> S82: Using a scale from zero to ten, where zero means you have *no confidence* and ten means you have *complete confidence*, how much confidence do you have in our government's ability to accurately assess the threat of terrorism occurring in the US?
>
> S83: Again, using the same scale from zero to ten, where zero means *no confidence* and ten means *complete confidence*, how much confidence do you have in the US government's ability to accurately assess the threat of terrorism occurring elsewhere in the world?

Figure 5.5: Mean Confidence in Assessing Threats of Terrorism

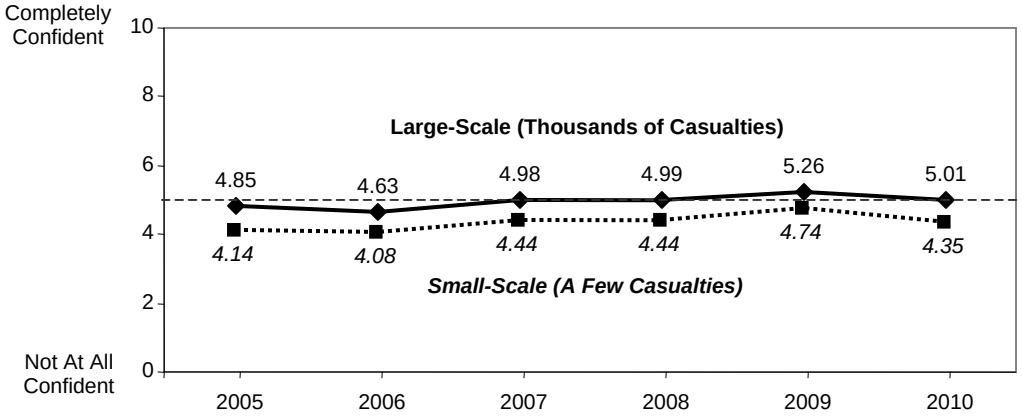


Note that, with one exception, all means for both questions are below mid-scale, indicating persistent doubt that US intelligence sources and processes can accurately assess the threat of terrorism at home or abroad.

If respondents doubt our abilities to assess the threat of terrorism, how do they judge our abilities to prevent large- and small-scale terrorist attacks in the US? To investigate those issues we pose the following inquiries and display mean responses to each in Figure 5.6.

> S72: On a scale from zero ten, where zero means *not at all confident* and ten means *completely confident*, how confident are you that the US can prevent large-scale terrorist attacks that injure or kill thousands of people from occurring in the US in the next ten years?
>
> S73: On the same scale from zero to ten, how confident are you that the US can prevent small-scale terrorist attacks that injure or kill a few people from occurring the US in the next ten years?

Figure 5.6: Mean Confidence in Preventing Terrorist Attacks in US

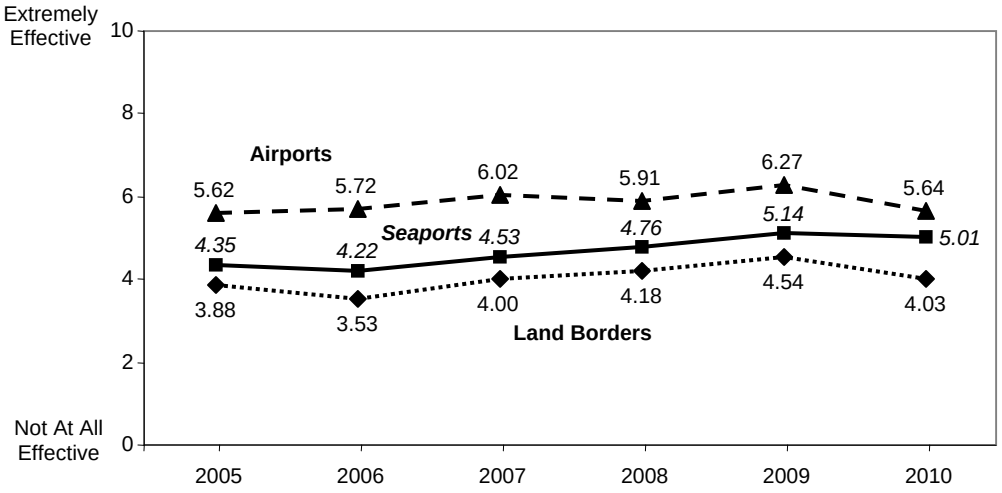


Consistent with confidence in US abilities to predict terrorism, mean confidence in preventing small-scale attacks in the US is below midscale in all measurement periods, while confidence in preventing larger-scale attacks is significantly higher, registering near or above midscale. When combined with our previously shown assessments of progress in and outlook for the war on terrorism, the data in Figures 5.5 and 5.6 reinforce a picture of seeming realism, with little suggestion of naïve public expectations. Our participants indicate measured expectations regarding US abilities to (a) prevail in the struggle against terrorism, (b) accurately anticipate and predict terrorist attacks, and (c) prevent such attacks in the US.

To examine the degree to which members of the public perceive differences in effectiveness among specified efforts to prevent terrorism in the US, we inquire about efforts to protect US airports, seaports, and land borders using the following series of questions; mean responses are charted in Figure 5.7.

> *Lead-in:* Since the terrorist attacks on the US in September 2001, the US government has taken several actions intended to improve homeland security. Using a scale from zero to ten, where zero means *not at all effective* and ten means *extremely effective*, how do you rate the efforts to improve each of the following thus far? (random order)
>
> - S69: How effective have efforts been to improve security at US *borders*?
> - S70: How effective have efforts been to improve security at US *seaports* and *harbors*?
> - S71: How effective have efforts been to improve security at US airports?

Figure 5.7: Mean Effectiveness of Defending US Borders, Seaports, Airports



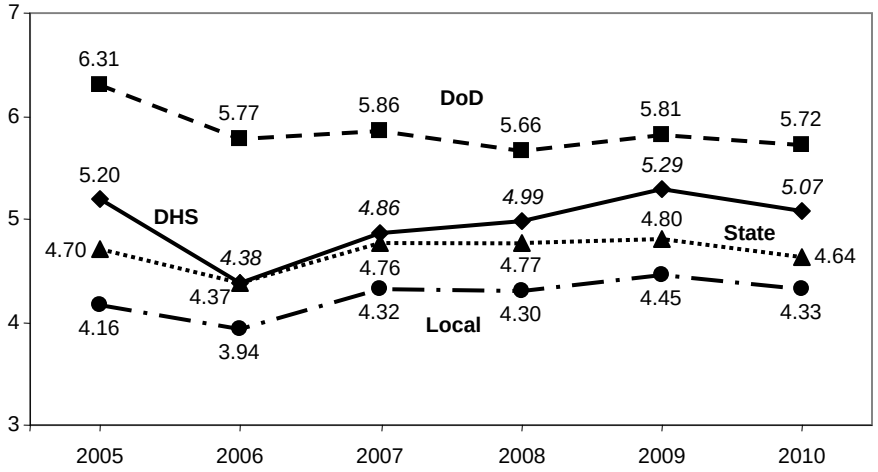
Our respondents report clear differences in perceived effectiveness of US efforts to secure entry points, with efforts to improve the security of US airports (dashed line) rated well above midscale in each measurement period and higher than the other two categories of entry points, but effectiveness is judged virtually the same in 2010 as when we began these inquiries in 2005. Efforts to improve seaport security (solid line) are perceived to be somewhat lower, but improving, with the assessed mean in 2010 being significantly higher than in 2005 ($p < .0001$). Efforts to secure US land borders (dotted line) are rated lowest, on average, in each measurement period, and all means are well below the midscale of 5.0.

If participants differentiate among ongoing efforts to defend the US from attacks, do they also hold different expectations of our abilities to respond to acts of terrorism? To investigate these kinds of perceptions, we pose the following series of questions about public confidence in federal, state, and local agencies to respond to large-scale terrorist attacks in the US.

> *Lead-in*: Now we want to know about the level of confidence you have in different agencies to respond to terrorist attacks that cause mass casualties like 9/11. Please use a scale from zero to ten, where zero mean *not at all confident* and ten means *extremely confident* when considering each of the following. (random order)
>
> - How confident are you in the ability of the US Department of Homeland Security to respond to large-scale terrorist attacks in the US?
> - How confident are you in the ability of the US Department of Defense, including active, reserve, and National Guard forces, to respond to large-scale terrorist attacks in the US?
> - How confident are you in the ability of your state government to respond to large-scale terrorist attacks in the US?
> - How confident are you in the ability of your city and county government to respond to large-scale terrorist attacks in the US?

We compare trends in mean responses in Figure 5.8. Please note that for display purposes, we have truncated the vertical axis to show only the values between three and seven on the full zero-to-ten scale.

Figure 5.8: Mean Confidence in Abilities to Respond to Large-Scale Terrorist Attacks (0 = Not At All Confident—10 = Extremely Confident)



Though the Department of Defense (top dashed line) enjoys the highest mean level of public confidence in its abilities to respond to large-scale terrorist attacks in the US, the trend is downward, with mean public confidence in the DoD being 9.4 percent lower in 2010 than when first measured in 2005 ($p < .0001$). The Department of Homeland Security (solid line) enjoys the next highest level of public confidence in its response capabilities, with an insignificant drop of only 3.4 percent over the five measurement periods ($p = .1673$). Public confidence in the response capabilities of state-level agencies (dotted line) has remained relatively stable, with means just below midscale and without significant change ($p = .5161$). Not surprisingly, the lowest relative mean confidence ratings are reported for local agencies (dashed line with dots) that may or may not have adequate resources to respond to large-scale events. Here, mean ratings have improved slightly (4.1 percent) since 2005 ($p = .0686$).

Short Answer

Q: How do Americans assess progress in the US struggle against terrorism to date, and what is the outlook for the future?

The effectiveness of US efforts against terrorism are rated slightly above midscale, but about eight percent lower in 2010 than in 2003. Public confidence in eventually prevailing against terrorism is rated slightly below midscale in 2010 and about 13 percent lower than when first measured in 2003. Together, these trends suggest increasing public pessimism. Mean levels of confidence in US assessments of the threat of terrorism in the US or abroad mostly are below midscale. Mean confidence in US abilities to prevent large-scale and small-scale acts of terrorism also are rated near midscale or somewhat below, with confidence significantly higher for abilities to prevent larger attacks. Respondents exhibit clearly differentiated assessments of the effectiveness of US efforts to secure key points of entry, with improvements to US airport security being rated highest, followed by security at US seaports and harbors, and the security of US land borders being rated lowest. Mean public confidence in US abilities to respond to large-scale terrorist attacks in the US is highest for the Department of Defense (but the trend is declining), followed by the Department of Homeland Security. Confidence in state and local agencies is lower, on average.

Section 5.3: Tolerance of Intrusive Antiterror Measures

In the aftermath of the terrorist attacks of 9/11, the US reorganized government and instituted a number of domestic measures designed to enhance security from terror attacks in the United States. But some policies that are intended to improve security also can impinge on individual rights and liberties, thereby affecting the societal balance of liberty and security. In this section we examine respondent support for ten different policies that may enhance security from terrorism but also may infringe on individual liberties, and we investigate how political partisanship, threat perceptions, and beliefs about balancing liberty and security affect tolerance for intrusive policies.

To measure receptivity to a variety of policies that may reduce the threat of terrorism but also may intrude into individual freedoms, we pose the follow-

ing two sets of questions designed to measure public acceptance of varying levels of intrusiveness. The four questions in the first set are framed so as to make the referent impersonal; the subsequent six questions in the second set personalize the policies to the individual respondent.

Lead-in: Using a scale where one means *strongly oppose* and seven means *strongly support*, how would you feel about the following measures for preventing terrorism in the US? (random order)

- S64: Requiring national identification cards for all US citizens
- S65: Restricting immigration into the US to prevent terrorism
- S66: Permitting government officials to hold and interrogate suspected terrorists within the US for a period of one year without charging the suspects with a crime
- S67: Permitting government officials to monitor the phone conversations of American citizens who are suspected of involvement in terrorism without requiring a warrant from a court of law

Lead-in: Efforts to prevent terrorism are causing debate about whether we should limit privacy and personal liberties in an effort to improve national security. On a scale from one to seven, where one means *strongly oppose* and seven means *strongly support*, how do you feel about the government taking the following measures in an effort to help prevent terrorism? (random order)

- S75: Collecting personal information about you, such as your name, address, phone number, income, and social security number
- S76: Collecting information about your behavior, such as where you shop, what you buy, what organizations you belong to, and where you travel
- S77: Conducting pat-down searches of your clothing and inspections of your belongings
- S78: Taking photographic images of you without your knowledge
- S79: Taking harmless electronic scans of your hands and face
- S80: Taking a sample of your DNA

In Table 5.2, we summarize percentages who oppose, are unsure, and support each of the measures in 2010.

Table 5.2: Tolerance for Intrusive Antiterror Measures

Policy	% Oppose	% Unsure	% Support
Restricting immigration	15	16	**70**
Requiring national identification cards	22	18	**60**
Holding suspects one year without charges	33	19	**49**
Monitoring phone calls without warrants	32	19	**49**
Scanning your hands and face	33	19	**48**
Conducting pat-down searches of you	37	22	**40**
Collecting personal data about you	**42**	20	37
Sampling your DNA	**50**	17	32
Collecting information about your behavior	**54**	20	27
Taking photos of you without permission	**55**	18	26

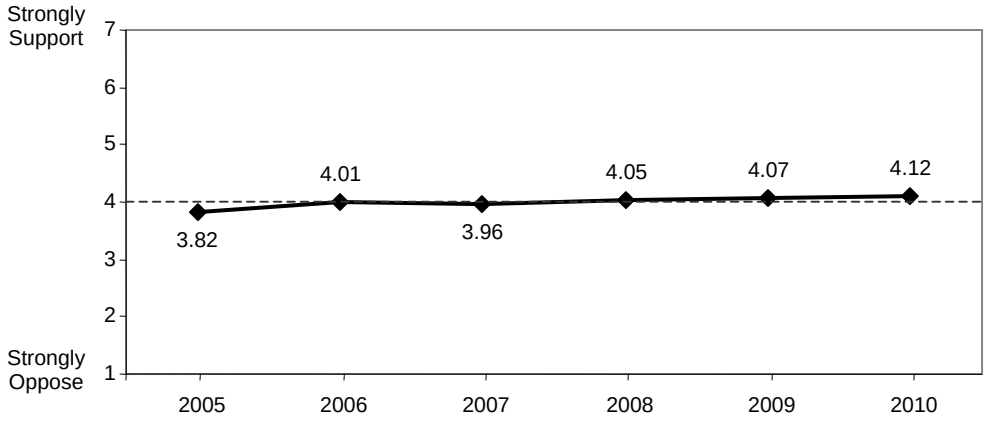
Majorities or pluralities of respondents support the first six items, most of which would seem to affect other people (assuming respondents do not believe themselves to be potential terrorists) or have become generally accepted techniques, such as pat-down searches which occur routinely at airports.[2] One exception is requiring national identification cards, which has received majority or plurality support in each of our surveys since 1995 and reflects broad public support for a policy that has thus far has not been advanced by the federal government.

The final four items in Table 5.2 are opposed by a plurality or majority of respondents, but, with the exception of DNA sampling, all are routinely practiced, though not necessarily for the stated purpose of preventing terrorism. Personal data are collected by numerous commercial and governmental agencies; shopping and spending behaviors increasingly are monitored for advertising and marketing purposes (especially on the Internet). Surprisingly, taking photos without individual permission is opposed by more participants than any measure in the list, yet is widely occurring in cities where public or commercial areas are monitored by security cameras. Even commercial establishments in small towns and rural areas, such as convenience stores and shopping malls, are routinely under camera surveillance without widespread public objection.

[2] More intrusive pat-down searches implemented in late 2010 in lieu of passengers submitting to whole-body electronic scans were not in practice at the time of our 2010 surveys.

By combining responses to each, we create an intrusion index that can be tracked over time for changes in public support or opposition to such anti-terror measures. As shown in Figure 5.9, the mean intrusion index has increased 7.9 percent over the past five years, and the mean acceptability of such measures is statistically significantly higher in 2010 than when we first began these questions in 2005 ($p < .0001$).

Figure 5.9: Mean Intrusion Index: 2005–2010



The modest increase in mean aggregate receptivity to these kinds of policies in the past five years could reflect public conditioning to antiterror security measures that have been emplaced since 9/11. Such activities include stepped-up airport security, greater levels of screening on entry for most federal buildings and many public gatherings such as sporting events, plus various more controversial federal practices such as holding foreign captives indefinitely without trial, increased monitoring of overseas phone traffic, and tracking suspicious movements of large amounts of money. We expect that what were once extraordinary measures could become accepted routine in a long struggle with terrorism, and we may see gradual but growing acceptance of the kinds of policies and measures that make up our intrusion index—especially should future large-scale terror events occur.

We expect public tolerance for intrusive antiterror measures to vary systematically with some demographic attributes, but more importantly, we expect receptivity to vary with ideological and political beliefs, perceptions of the threat of terrorism in the US, and broad beliefs and perceptions of how lib-

erty and security relate. In the remainder of this section, we investigate how each of these factors relates to our intrusion index.

Political Beliefs and Tolerance for Intrusive Measures

To investigate the effects of political beliefs on our intrusion index in 2010, we employ self-identified political ideology, recorded on a continuous scale from one (strongly liberal) to seven (strongly conservative), as an independent variable to predict support for the intrusion index when controlling for respondent demographics. Table 5.3 summarizes results.

Table 5.3: Multiple Regressions Using Ideology to Predict Intrusion Index Scores: 2010

Independent Variables	Coefficient (Slope)	t-Value	*p*-Value
Ideology (1 = Strongly Liberal—7 = Strongly Conservative)	0.14	5.22	< .0001
Age (18–94)	0.01	4.31	<.0001
Education (1 = College Graduate)	–0.01	–0.07	.9407
Gender (1 = Men)	–0.09	–1.12	.2616
Race/Ethnicity (1 = Native Americans, African Americans, Hispanics)	–0.18	–1.52	.1292
Household Income (1= <$10K—16 = >$150K)	0.02	2.19	.0285
Intercept = 3.00	Adj. R^2 = 0.05		

After controlling for age, education, gender, race/ethnicity, and income, as political ideology increases one point on the 1–7 scale, support for our index of intrusive antiterror measures systematically increases 0.14 points on the 1–7 index scale. The effect is illustrated by comparing means among three ideological groups. Among those identifying as strongly liberal or liberal (ideology scores of 1–2), the mean intrusion index score is 3.73, while among moderates (ideology scores of 3–5) the mean intrusion index value is 4.15, and those identifying as conservative or strongly conservative (ideology scores of 6–7) average 4.48 on the intrusion index. Differences in means among the three groups all are statistically significant (< .001). As

political conservatism increases, so too does tolerance or support for intrusive antiterror measures.

Terror Threat Perceptions and Tolerance for Intrusive Measures

We examine the effects of perceptions of the threat of terrorism on willingness to accept intrusive defensive measures by combining responses to two questions described in Section 5.1: the threat of all forms of terrorism in the US today (S54) and in the next ten years (S60). Each is recorded on a continuous scale from zero to ten, where zero means no threat, and ten means extreme threat. For this investigation, responses to both questions in 2010 are averaged to form a single combined overall US terrorism threat measure used in multiple regressions to predict intrusion index scores while controlling for demographics. We show regression results in Table 5.4.

Table 5.4: Multiple Regressions Using Threat Perceptions to Predict Intrusion Index Scores: 2010

Independent Variables	Coefficient (Slope)	t-Value	*p*-Value
US Terror Threat (0 = No Threat—10 = Extreme Threat)	0.19	9.54	< .0001
Age (18–94)	0.01	2.81	.0051
Education (1 = College Graduate)	0.02	0.19	.8463
Gender (1 = Men)	–0.03	–0.39	.6992
Race/Ethnicity (1 = Native Americans, African Americans, Hispanics)	–0.22	–1.92	.0556
Household Income (1= <$10K—16 = >$150K)	0.03	2.44	.0148
Intercept = 2.31	Adj. R^2 = 0.10		

Holding demographics constant, as perceptions of the overall threat of terrorism in the US today and in the next ten years increase one point on the 0–10 scale, support for intrusive policies for preventing terrorism increases 0.19 points along the 1–7 intrusion index scale. To illustrate how that translates to differences in mean values, those who assess the threat of terrorism in the US as low (threat values of 0–3) report mean support for the intrusion index of 2.82; those who rate the threat as moderate (threat values of 4–6)

report a mean tolerance score of 3.85; and those perceiving the overall terror threat in the US as high (threat values of 7–10) score a mean value of 4.38 on the intrusion index. Differences in means among all three groups are statistically significant ($p < .0001$). As perceptions of the overall threat of terrorism in the US increase, so too does support for intrusive antiterror domestic policies.

Beliefs About Balancing Liberty and Security in the US

Without suggesting that liberty and security always are related in a zero-sum fashion, it can be useful to explore their relative balance as a fundamental tension underlying democratic governance. We explore the relationship between liberty and security in two ways: respondent preferences for how liberty and security ought, ideally, to be balanced, and how respondents perceive liberty and security to be balanced currently. The difference between normative preferences and perceptions of reality represent a measure of satisfaction or dissatisfaction with this key dynamic. If public beliefs about liberty and security are consistent, we should find that differences between preferred and perceived balances ought systematically to relate to tolerance for intrusive domestic measures intended to protect society from terrorist attacks. We begin with the following metrics: the first question is designed to measure the ideal or *preferred* relationship of liberty and security; the second is designed to measure the *perceived* relationship.

> *Lead-in*: Increasing security for Americans sometimes requires reducing liberties, and finding the right mix of security and liberty is a matter for public debate.
>
> - S62: For this question, assume that *black* marbles represent the level of emphasis placed on the *security* of Americans and *white* marbles represent the level of emphasis placed on *liberties* of Americans. How many of each color would you place in a total combined mix of 100 marbles?
>
> - S63: Again, using the marbles example where *black* marbles represent the level of emphasis placed on the *security* of Americans, and *white* marbles represent the level of emphasis placed on *liberties* of Americans, how many of each color do you think represents the way the US government is balancing considerations of security and liberties today?

We compare 2010 distributions for each question in Table 5.5.

Table 5.5: Preferred vs. Perceived Balance of Liberty and Security: 2010

	Mean Preferred	Mean Perceived	Difference
Liberty (White Marbles)	50.815	49.302	–1.513
Security (Black Marbles)	49.185	50.698	+1.513

On average, our respondents in 2010 prefer to have slightly greater emphasis on liberty and slightly less emphasis on security than they perceive to be the existing balance.

Next we use the difference between preferred emphasis on liberty and perceived emphasis on security as an independent variable to see if it is systematically predictive of the intrusion index when controlling for the same demographic factors previously described. We show results in Table 5.6.

Table 5.6: Multiple Regressions Using Dissatisfaction With Perceived Balance of Liberty and Security to Predict Intrusion Index Scores: 2010

Independent Variables	Coefficient (Slope)	t-Value	*p*-Value
Difference in Preferred vs. Perceived Emphasis on Liberty (White Marbles)	0.02	13.46	< .0001
Age (18–94)	0.01	3.58	.0004
Education (1 = College Graduate)	–0.02	–0.25	.7996
Gender (1 = Men)	0.02	0.20	.8431
Race/Ethnicity (1 = Native Americans, African Americans, Hispanics)	–0.21	–1.92	.0556
Household Income (1= <$10K—16 = >$150K)	0.02	1.82	.0689
Intercept = 3.69	Adj. R^2 = 0.16		

Again, we find a systematic relationship in which the difference in preferred vs. perceived emphasis on liberty systematically is predictive of support for the intrusion index.[3] To illustrate the difference in tolerance, those respondents who judge the current emphasis being placed on liberty by the US government to be too little (also meaning too much emphasis on security)

[3] Of course the same relationship also is evident between differences in preferred and perceived emphasis on security, but the sign (valence) is reversed.

score an average of 3.49 on the intrusion index; those perceiving the current emphasis on liberty to be the same as their normative preference average 4.34 on the intrusion index; and those participants who believe too much emphasis currently is being placed on liberty (at the expense of security), average 4.56 on the intrusion index. Here too, differences in means all are statistically significant.[4]

These excursions illustrate that tolerance for intrusive antiterror policies systematically varies with political beliefs, threat perceptions, and satisfaction with the perceived balance of liberty and security in American society today. Our regressions also show that among five measures of demographic attributes, only age is consistently predictive, with tolerance for intrusive policies increasing with age.

Short Answer

Q: How are public views of intrusive domestic measures to prevent terrorism evolving, and what key factors help shape those attitudes?

On average, tolerances for the specified intrusive measures intended to reduce the threat of acts of terror within the US are near midscale, but have slowly increased over the past five years. Our respondents are more tolerant of restrictions that they think are likely to affect other people, such as restricting immigration and monitoring phone conversations among suspected terrorists. However, about 60 percent of participants support national identification cards. Less tolerance is evident for monitoring of their individual behaviors, or taking photos of them without their knowledge, or requiring that they provide DNA samples. Support for intrusive antiterror measures systematically increases with age, political conservativism, terror threat perceptions, and beliefs that too little emphasis currently is being given to security relative to liberty.

[4] Paired p values for differences in means are as follows: those seeing too little emphasis on liberty vs. those who think the current balance is correct: $p < .0001$; those believing too little emphasis is being given to liberty vs. those believing too much emphasis is being placed on liberty: $p < .0001$; those seeing too little emphasis on liberty vs. those who think the balance today is correct: $p = .0240$.

Appendix 1

Research Methodology

Section 1: Sampling

Internet Surveys

Samples for the Internet versions of the energy and environmental survey and the nuclear security and terrorism survey were purchased from Survey Sampling International (SSI), which provides direct access to more than six million research respondents plus millions more through preferred partner relationships across 54 countries. In the United States, SSI maintains an Internet panel, titled SurveySpot, consisting of volunteer members from many sources, including several thousand Web properties, multiple online recruitment methods, and random digit dialing telephone recruitment. SurveySpot members are recruited exclusively using permission-based techniques. Unsolicited email is not employed; membership requires a double opt-in, and all applicants are carefully screened. The membership of SurveySpot is continuously changing, but at the time of our samples, it consisted of more than a million panelists representing a similar number of US households (only one member in each household can participate in any SurveySpot panel for the same survey). SSI maintains a subpanel of approximately 400,000 members whose demographics are roughly proportional to national census characteristics. Our samples were randomly drawn from the 400,000 census balanced subpanel. Each member of the samples received an email invitation to participate in the survey describing the general nature and subject matter of the study. As an incentive to participate, each respondent who completed the survey received a five dollar stipend and was entered into a drawing for a larger cash award.

Samples for both surveys were drawn using the following procedures:

- The total available universe (population) of eligible respondents was identified.
- The available universe was sorted by ZIP codes.

- The available universe was divided by the required sample size to create a selection interval.

- A random number greater than or equal to zero and less than the selection interval was generated to provide a starting point. Generation was done via a standard Oracle random number generation algorithm.

- Using this starting point, every *n*th record was selected according to the selection interval. When there were requirements to eliminate duplicate or otherwise ineligible panelists (age, household, etc.), the next record was selected as a replacement. The *n*th intervals were not recalculated as a result of eliminating ineligibles.

- The resulting sample was randomly sorted using a standard Oracle random sorting algorithm.

- After the sample was randomly sorted, sample units (e-mail addresses) were randomly assigned to batch mailings. When samples were batch mailed, each batch represented a mini version of the entire overall sample, virtually identical in demographics, geography, etc. to every other batch.

Phone Surveys

For the phone versions of the energy and environmental survey and the nuclear security and terrorism survey, national sample frames of randomly selected and randomly ordered households having one or more telephones were purchased from Survey Sampling, International (SSI), of Fairfield, Connecticut. The sample frames were drawn from a random digit database, stratified by county, in which each telephone exchange and working block had a probability of selection equal to its share of listed telephone households. This was accomplished as follows. All blocks within a county were organized in ascending order by area code, exchange, and block number. After a proportional quota had been allocated to all counties in the frame, a sampling interval was calculated by summing the number of listed residential numbers in each eligible block within the county and dividing that sum by the number of sampling points assigned to the county. From a random start between zero and the sampling interval, blocks were systematically selected in proportion to their density of listed households. After a block was selected, a two-digit random number in the range 00–99 was appended to the exchange and block to form a ten digit telephone number. Known business numbers were eliminated.

For each survey, the sample frame was loaded into a computer assisted telephone interviewing system at the Survey Research Center of the University of Oklahoma's Public Opinion Learning Laboratory that selected and dialed the individual numbers. Each household in each sample had an equal chance of being called. Probability sampling was extended within each household by interviewing only the member of the household over the age of 18 with the most recent birthday. Up to ten attempts were made to contact the individual selected for the sample. No substitutions were made.

Demographic Representativeness

Table A1.1 compares key national and regional population parameters to the demographic characteristics of respondents to our four surveys in 2010.

Table A1.1: Demographic Representativeness of Respondents

Demographic Category	US Population	EE-Web 2010 (%)	EE-Phone 2010 (%)	NS-Web 2010 (%)	NS-Phone 2010 (%)
Gender[1]					
Men	48.2 [2]	47.7	43.9	51.0	44.3
Women	51.8 [3]	52.3	56.1	49.0	55.7
Age[4]					
18–24	13.2	18.7	7.3	19.8	4.1
25–49	44.2	33.6	26.0	38.7	23.7
50 and above	42.6	47.7	66.7	41.5	72.2
Education[5]					
H.S. Grad or Higher	79.7 [6]	97.5	97.3	98.3	95.8
Bachelor's or >	22.3 [7]	38.4	45.9	40.9	45.2

[1] U.S. Census Bureau 2000a.
[2] The proportion of men 18 years old and above is used for comparison because by design we excluded individuals below the age of 18 from participating in our surveys.
[3] The proportion of women 18 years old and above is used for comparison because by design we excluded individuals below the age of 18 from participating in our surveys.
[4] U.S. Census Bureau 2000b.
[5] U.S. Census Bureau 2000c.
[6] The proportion of the population 18 years of age and above having graduated high school (including equivalency) or having attained higher levels of education is used for comparison because by design we excluded individuals below the age of 18 from participating in our surveys.
[7] The proportion of the population 18 years of age and above having a Bachelor's degree or higher is used for comparison because by design we excluded individuals below the age of 18 from participating in our surveys.

Table A1.1 (cont.): Demographic Representativeness of Respondents

Demographic Category	US Population	EE-Web 2010 (%)	EE-Phone 2010 (%)	NS-Web 2010 (%)	NS-Phone 2010 (%)
Race / Ethnicity[8]					
White, non-Hispanic	70.0	85.4	85.7	80.7	86.3
African Am. / Black	12.0	5.9	6.6	9.7	6.3
Hispanic (any race)	12.6	3.3	2.8	4.2	4.2
Am. Indian	0.7	1.2	2.4	1.2	1.1
Asian / Pacific Is.	4.6	3.5	0.9	3.3	0.4
Other	NA	0.7	1.6	0.9	1.7
Household Income[9]					
$0–49,999	50.2	61.7	39.3	56.3	35.8
$50,000–99,999	29.6	30.7	32.9	32.5	37.6
$100,000 and above	20.2	7.6	27.8	11.2	26.6
Region[10]					
Northeast [11]	18.5	19.3	18.1	18.0	18.6
Midwest [12]	21.8	26.7	26.3	27.3	27.1
South [13]	36.6	34.2	35.5	33.7	36.7
West [14]	23.1	19.8	20.2	21.0	17.6

[8] U.S. Census Bureau 2000b.
[9] U.S. Bureau of Labor Statistics and U.S. Census Bureau 2010.
[10] U.S. Census Bureau 2010. Alaska, Hawaii, Micronesia, Guam, Marshall Islands, Northern Mariana Islands, Palau, Puerto Rico, Midway Islands, and the Virgin Islands are not included in the phone sample frames. Regional population data include only 18 years of age and older.
[11] States included in the *Northeast* region include Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, and the District of Columbia.
[12] States included in the *Midwest* region include Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.
[13] States included in the *South* region include Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia.
[14] States included in the *West* region include Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming. Alaska and Hawaii are included in the Internet samples, but are excluded from the phone samples.

Section 2: Data Collection

Data for the Internet survey on nuclear security and terrorism were collected May 17–18, 2010 from 1,404 respondents. The phone survey on nuclear security and terrorism was conducted May 9–June 10, 2010 among 582 participants. Data for the Internet survey on energy and environmental security were collected from 1,890 participants June 8–9, 2010. The phone survey on energy and environmental security was conducted June 1–July 5, 2010 with 529 respondents.

For the protection of participants, all survey questions and their applications were approved by the Institutional Review Board of the University of Oklahoma. The nationwide telephone surveys were conducted by the University of Oklahoma's Public Opinion Learning Laboratory (POLL). Before data collection began, an extensive review of the survey instruments was conducted by the senior interviewing staff, survey research center supervisors, and the research design team. During this step the surveys were checked for content that might be culturally insensitive or threatening to different socio-economic or demographic groups. This process reduced the likelihood that the instruments would inadvertently induce respondents from different groups or classes to drop out before completing the surveys. Also during this step, the skip patterns used were checked to ensure that the specified research parameters were met. Then a verbal protocol test was conducted for each survey with senior interviewers to identify any remaining problematic question wording or computer programming errors.

When the survey instruments were in final form, training was conducted with each of the interviewers and supervisors to ensure they were proficient in the standardized procedures and terminology. This process entailed oral reading of the survey instruments in group training sessions to make sure that proper and consistent emphasis was given to the various words and phrases specified in the surveys, and to assure that respondents were interviewed using consistent phrasing, emphasis, and protocols during the data collection processes. Data collection did not begin until each interviewer demonstrated thorough competence with the survey instructions and reading aloud the questions for each survey instrument.

The interviews for each survey were conducted by experienced interviewers using a computer-assisted telephone interviewing system that recorded data

in centralized collection files. Rigorous supervision and quality control measures were applied throughout the data collection processes. No interviews were conducted without the presence of a supervisor. A silent monitor was used by supervisors to evaluate individual interviewers and to ensure high quality and continuity in application of the survey protocols throughout the data collection phases. The quality of the data collected was continually monitored to assure that intended collection standards were maintained for each survey. These procedures included periodic downloading and analysis of responses and diagnostics such as the degree of "reluctance" of survey participants, the proportions of collections by region, and standardized recording of verbatim responses where appropriate.

The sample sizes and random selection procedures for the phone surveys provide approximately plus or minus four percent sampling error. Using calculation formulas in accordance with the American Association for Public Opinion Research guidelines (AAPOR 2004), the cooperation rate for the nuclear security and terrorism phone survey was 76.1 percent, and the cooperation rate for the energy and environmental security phone survey was 78.4 percent.[15]

Both Internet surveys were self-administered and data were automatically compiled by Survey Sampling International. Comparable cooperation rates cannot be calculated for Internet surveys.

[15] The formula for calculating the cooperation rate is as follows: Completes / Completes + Partials + Screened Refusals.

Appendix Two

Energy and Environment Data Summaries

Web: *n* = 1890; 8–9 June 2010; avg. time = 33 min
Phone: *n* = 529; 1 June—5 July 2010

e1_age How old are you?

	Mean
2010 web	47.8
2010 phone	55.7
2009 web	45.8
2008 web	44.5
2008 phone	53.3
2007 web	48.4
2006 web	44.2
2006 phone	50.6

e2_edu What is the highest level of education you have completed?

%	2010 Web	2010 Phone	2009 Web	2008 Web	2008 Phone	2007 Web	2006 Web	2006 Phone
1. < High school graduate	3	3	2	1	3	1	1	6
2. High school graduate	22	25	20	19	27	17	14	26
3. Some college / vocational school	37	27	37	37	29	35	39	28
4. College graduate	26	28	25	26	24	26	27	22
5. Some graduate work	4	2	6	5	3	7	6	3
6. Master's degree	7	12	7	10	12	10	9	11
7. Doctorate	2	3	3	2	2	3	3	3
8. Other degree	0	0	0	0	0	<1	0	0

e3_gend As part of the survey, I am required to ask: are you male or female?

%	Female 0	Male 1
10 web	52.3	47.7
10 phone	56.1	43.9
09 web	52.2	47.8
08 web	52.4	47.6
08 phone	57.6	42.4
07 web	50.9	49.1
06 web	51.8	48.2
06 phone	58.9	41.1

Now I want to ask you some questions about important issues facing policy makers in the US today.

For each of the following issues, please rate your level of concern about the issue using a scale from zero to ten, where zero means you are *not at all concerned* and ten means you are *extremely concerned*. How concerned are you about: [e4–e8 Randomized]

e4_worry1 Threats to national security, including terrorism?

	Not at All Concerned										Extremely Concerned	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	2	1	2	3	3	8	9	13	15	14	30	7.56
10 phone	1	0	2	4	2	9	6	13	17	7	38	7.84
09 web	2	1	2	2	3	7	8	11	15	14	35	7.83
08 web	1	1	1	2	3	9	8	14	16	14	31	7.75
08 phone	1	1	1	1	4	13	7	12	18	9	34	7.71
07 web	0	1	1	1	2	7	9	13	18	16	31	7.96
06 web	1	0	1	3	3	8	7	14	17	17	29	7.86
06 phone	2	1	1	2	3	9	6	9	16	10	40	7.91

[10 web vs. 09 web: $p = .0011$] [10 web vs. 10 phone: $p = .0201$]

e5_worry2 The delivery and cost of healthcare in the US?

	Not at All Concerned										Extremely Concerned	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	2	0	1	2	2	6	5	10	16	17	39	8.18
10 phone	1	1	1	2	2	7	3	10	17	9	47	8.28
09 web	2	0	1	1	2	5	5	10	13	19	43	8.40
08 web	1	0	1	1	2	4	5	10	16	16	45	8.50
08 phone	0	0	2	1	1	9	6	8	17	10	46	8.29
07 web	0	0	1	1	1	5	6	11	15	19	40	8.43
06 web	1	0	1	1	1	6	6	10	15	18	42	8.41
06 phone	1	0	1	1	2	6	4	9	17	13	47	8.47

[10 web vs. 09 web: $p = .0026$] [10 web vs. 10 phone: $p = .3673$]

e6_worry3 The availability and cost of energy in the US?

	Not at All Concerned										Extremely Concerned	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	2	1	1	2	2	7	8	15	18	16	29	7.82
10 phone	1	0	1	1	3	11	6	20	21	9	27	7.66
09 web	1	0	1	1	2	6	7	13	18	17	35	8.19
08 web	0	0	0	1	2	4	4	10	14	17	47	8.61
08 phone	0	0	1	1	1	6	7	9	19	14	42	8.38
07 web	0	0	1	1	1	5	6	13	20	19	34	8.31
06 web	0	0	1	1	1	5	6	12	18	20	36	8.41
06 phone	1	0	1	1	2	8	5	12	21	12	37	8.09

[10 web vs. 09 web: $p < .0001$] [10 web vs. 10 phone: $p = .1273$]

e7_worry4 The effects of human activities on the environment? (NOTE: wording change in 09)

	Not at All Concerned										Extremely Concerned	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	4	2	2	3	5	11	9	12	15	13	24	7.02
10 phone	3	1	3	4	4	14	5	12	18	9	28	7.17
09 web	3	2	2	3	3	9	9	12	16	13	27	7.30
08 web	2	1	1	2	3	7	8	12	17	14	33	7.81
08 phone	1	1	2	2	3	14	8	12	21	8	28	7.45
07 web	1	0	2	2	3	9	9	14	18	17	25	7.63
06 web	1	1	2	2	3	9	9	15	16	15	26	7.52
06 phone	1	1	1	2	3	13	8	14	19	9	28	7.50

[10 web vs. 09 web: $p = .0019$] [10 web vs. 10 phone: $p = .2469$]

e8_worry5 The state of the economy, including jobs and inflation?

	Not at All Concerned										Extremely Concerned	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	1	0	1	1	2	5	4	9	16	19	42	8.42
10 phone	0	0	0	1	1	3	3	8	20	11	52	8.80
09 web	1	0	0	1	1	3	4	7	13	19	50	8.76
08 web	0	0	0	1	2	5	6	10	16	16	45	8.50
08 phone	0	0	1	1	1	7	4	9	16	13	48	8.54
07 web	1	0	1	3	2	8	9	14	20	16	27	7.80
06 web	1	0	1	1	2	7	8	15	18	17	29	7.92
06 phone	1	1	2	3	3	10	7	13	20	11	30	7.62

[10 web vs. 09 web: $p < .0001$] [10 web vs. 10 phone: $p = .0001$]

The next several questions ask about your views on energy and environmental issues. These questions concern your perceptions and beliefs, so don't worry about being right or wrong when providing your answers.

e9_futr Using a scale from zero to ten, where zero means you are *not at all confident* and ten means you are *completely confident*, how confident are you that there will be adequate sources of energy to meet the energy needs of the US during the next 20 years? Please think about US energy needs overall, including transportation, heating, electricity, and other energy requirements when considering your answer.

	Not at All Confident										Completely Confident	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	5	2	5	8	11	19	11	14	12	5	7	5.47
10 phone	3	2	4	5	7	22	11	10	16	5	15	6.19
09 web	5	2	6	9	12	20	13	13	10	3	7	5.36
08 web	8	4	9	12	10	18	11	11	7	3	7	4.85
08 phone	9	2	5	8	9	21	8	10	12	4	12	5.46
07 web	5	1	7	12	10	18	13	14	10	4	7	5.38
06 web	6	3	9	11	10	18	12	10	11	5	6	5.16
06 phone	4	1	5	7	10	20	7	12	12	7	14	5.97

[10 web vs. 09 web: $p = .2028$] [10 web vs. 10 phone: $p < .0001$]

e10_egpol As you may know, US energy policies generally deal with such issues as the sources and adequacy of energy supplies, the costs of various types of energy, and the environmental implications of using energy. Using a scale from zero to ten, where zero means *not at all satisfied* and ten means *completely satisfied*, how satisfied are you with current US energy policies overall?

	Not at All Satisfied										Completely Satisfied	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	10	5	9	13	13	24	11	7	4	2	2	4.17
09 web	10	4	10	16	14	20	11	7	4	1	2	4.14
08 web	18	8	14	16	12	15	7	5	3	1	2	3.36
08 phone	19	4	12	13	14	21	5	6	4	1	2	3.54
07 web	13	6	12	13	16	18	10	7	3	2	1	3.80
06 web	12	7	12	15	14	18	9	6	3	2	1	3.77
06 phone	15	4	10	11	13	23	8	7	6	1	2	3.97

[10 web vs. 09 web: $p = .7210$]

e11_nature On a scale from zero to ten, where zero means that nature is *robust and not easily damaged* and ten means nature is *fragile and easily damaged*, how do you view nature?

	Robust and *Not* Easily Damaged										Fragile and *Is* Easily Damaged	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	3	2	4	5	8	16	9	15	14	7	17	6.38
09 web	3	2	3	5	6	15	11	17	15	7	17	6.52
08 web	2	2	4	6	7	14	10	17	15	7	17	6.51
08 phone	3	1	3	4	4	19	8	11	17	6	24	6.85
07 web	2	1	4	4	6	15	11	17	17	10	14	6.63
06 web	2	1	3	5	7	15	12	16	16	8	15	6.61
06 phone	2	1	2	3	4	15	7	13	17	9	28	7.25
02 phone	2	2	3	3	4	13	7	11	17	7	33	7.36

[10 web vs. 09 web: $p = .1095$]

As you may know, the issue of global climate change has been the subject of public discussion over the last few years.

e12_inform On a scale from zero to ten where zero means *not at all informed* and ten means *completely informed*, how well informed do you consider yourself to be about the issue of global climate change?

	Not At All Informed										Completely Informed	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	2	1	3	6	9	22	15	16	13	5	7	5.96
09 web	1	1	3	5	6	20	15	18	16	6	7	6.22
08 web	1	2	2	5	9	17	15	19	16	7	7	6.24
08 phone	4	0	3	5	4	13	12	16	22	9	13	6.66
07 web	1	1	2	5	6	17	17	21	16	8	6	6.35

[10 web vs. 09 web: $p = .0003$]

e13_temp In your personal experience, over the past few years have average temperatures where you live been rising, falling, or staying about the same as previous years?

%	Rising 1	Falling 2	Staying About the Same 3
10 web	42	13	44
09 web	47	14	39
08 web	52	13	35
08 phone	49	11	40
07 web	59	5	36

e14_drought In your personal experience, over the past few years has drought where you live been more frequent, less frequent, or stayed about the same as previous years?

%	More Frequent 1	Less Frequent 2	Stayed About the Same 3
10 web	29	21	50
09 web	39	16	45
08 web	44	13	43
08 phone	40	8	52

e15_floods In your personal experience, over the past few years has flooding where you live been more frequent, less frequent, or stayed about the same as previous years?

%	More Frequent 1	Less Frequent 2	Stayed About the Same 3
10 web	32	15	53
09 web	31	19	51
08 web	28	20	51
08 phone	26	19	56

Scientists who specialize in the study of the earth's climate have debated the possible effects of climate change. To the best of your knowledge, do most scientists expect any of the following changes in the global climate to take place? [e16–e20 Randomized]

e16_expt1 Do most scientists expect temperature to rise?

%	No 0	Yes 1
10 web	18	82
09 web	15	85
08 web	11	89
08 phone	12	88
07 web	10	90

[10 web vs. 09 web: Chi Sq = 5.67; p = .0170]

e17_expt2 Do most scientists expect ocean levels to drop?

%	No 0	Yes 1
10 web	62	38
09 web	62	38
08 web	59	41
08 phone	67	33
07 web	66	34

[10 web vs. 09 web: Chi Sq = 0.10; p = .7499]

e18_expt3 Do most scientists expect more frequent droughts?

%	No 0	Yes 1
10 web	29	71
09 web	23	77
08 web	20	80
08 phone	16	84
07 web	17	83

[10 web vs. 09 web: Chi Sq = 16.98; p < .0001]

e19_expt4 Do most scientists expect fewer floods?

%	No 0	Yes 1
10 web	81	19
09 web	79	21
08 web	80	20
08 phone	80	20
07 web	87	13

[10 web vs. 09 web: Chi Sq = 0.98; p = .3218]

e20_expt5 Do most scientists expect more severe weather storms, like hurricanes and tornadoes?

%	No 0	Yes 1
10 web	15	85
09 web	14	86
08 web	12	88
08 phone	9	91
07 web	10	90

[10 web vs. 09 web: Chi Sq = 0.68; p = .4104]

Many scientists have argued that global average temperatures have risen slightly and will continue to increase for many years as a result of human activities. To the best of your knowledge:
[e21–e25 Randomized]

e21_rise1 Do scientists believe exhausts from cars and trucks cause global temperatures to rise?

	No 0	Yes 1
10 web	14	86
09 web	11	89
08 web	11	89
08 phone	10	90
07 web	10	90

[10 web vs. 09 web: Chi Sq = 6.32; *p* = .0119]

e22_rise2 Do scientists believe nuclear power plants cause global temperatures to rise?

%	No 0	Yes 1
10 web	52	48
09 web	48	52
08 web	45	55
08 phone	52	48
07 web	54	46

[10 web vs. 09 web: Chi Sq = 6.30; *p* = .0120]

e23_rise3 Do scientists believe disposal of toxic chemicals in landfills causes global temperatures to rise?

%	No 0	Yes 1
10 web	37	63
09 web	33	67
08 web	36	64
08 phone	38	62
07 web	45	55

[10 web vs. 09 web: Chi Sq = 5.84; *p* = .0156]

e24_rise4 Do scientists believe coal powered electricity plants cause global temperatures to rise?

%	No 0	Yes 1
10 web	30	70
09 web	26	74
08 web	24	76
08 phone	24	76
07 web	24	76

[10 web vs. 09 web: Chi Sq = 4.89; *p* = .0270]

e25_rise5 Do scientists believe the destruction of jungles and forests causes global temperatures to rise?

%	No 0	Yes 1
10 web	15	85
09 web	14	86
08 web	14	86
08 phone	13	87
07 web	12	88

[10 web vs. 09 web: Chi Sq = 1.18; *p* = .2765]

e26_deg To the best of your knowledge, how much do scientists think the average global temperature will increase over the next 50 to 70 years?

%	0–1 Degree 1	2–5 Degrees 2	6–9 Degrees 3	10 or More Degrees 4
10 web	14	50	22	15
09 web	11	47	24	18
08 web	13	48	24	15
08 phone	13	49	22	15
07 web	11	48	23	18

e27_gcc In your view, are greenhouse gases, such as those resulting from the combustion of coal, oil, natural gas, and other materials causing average global temperatures to rise?

%	Are Not 0	Are 1
10 web	33	67
10 phone	37	63
09 web	27	73
08 web	25	75
08 phone	24	76
07 web	24	76
06 web	25	75
06 phone	23	77

[10 web vs. 09 web: Chi Sq = 15.71; $p < .0001$] [10 web vs. 10 phone: Chi Sq = 3.54; $p = .0600$]

e**28_gcccert** On a scale from zero to ten, where zero means *not at all certain* and ten means *completely certain*, how certain are you that greenhouse gases <are/are not> (from e27) causing average global temperatures to rise?

%	Not at All Certain 0	1	2	3	4	5	6	7	8	9	Completely Certain 10	Mean
10 web	4	1	3	4	6	19	14	15	15	7	12	6.28
10 phone	5	1	3	4	3	13	5	10	19	9	28	7.15
09 web	4	1	2	4	5	18	12	17	16	8	13	6.50
08 web	3	1	2	4	5	16	16	17	16	8	11	6.40
08 phone	6	3	4	4	4	14	9	13	16	4	23	6.47
07 web	4	1	2	3	4	18	13	16	18	9	12	6.53
06 web	3	1	2	3	3	15	14	18	19	10	13	6.78
06 phone	4	1	2	3	3	12	8	13	19	11	23	7.11

[10 web vs. 09 web: $p = .0095$] [10 web vs. 10 phone: $p < .0001$]

e29_gccrsk On the scale from zero to ten, where zero means *no risk* and ten means *extreme risk*, how much risk do you think global warming poses for people and the environment?

	No Risk										Extreme Risk	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	5	2	5	5	4	15	10	15	15	8	17	6.34
10 phone	9	2	6	5	5	9	9	8	19	7	21	6.26
09 web	3	2	4	4	4	12	12	15	16	9	20	6.75
08 web	3	2	3	4	4	13	11	16	17	8	19	6.79
08 phone	5	2	3	6	4	12	8	11	14	9	27	6.89
07 web	3	1	3	4	3	11	11	13	17	11	23	7.07
06 web	2	2	3	4	5	11	11	15	15	11	21	6.96
06 phone	4	1	3	3	4	11	8	13	19	9	24	7.03

[10 web vs. 09 web: $p < .0001$] [10 web vs. 10 phone: $p = .5911$]

e30_slow On a scale from zero to ten, where zero means *not at all important* and ten means *extremely important*, how important do you think it is for the US to reduce greenhouse gas emissions?

	Not at All Important										Extremely Important	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	4	2	4	4	4	14	10	12	13	8	25	6.81
10 phone	7	2	5	3	4	10	6	9	14	9	31	6.88
09 web	3	2	2	3	3	12	9	11	14	11	30	7.24
08 web	3	1	2	3	4	12	9	13	13	10	30	7.30
08 phone	5	1	3	3	2	11	4	9	14	9	39	7.48
07 web	2	1	2	3	2	11	11	12	14	12	31	7.47
06 web	2	1	2	3	3	10	10	14	16	11	28	7.41
06 phone	3	1	3	2	3	10	6	10	17	9	35	7.54

[10 web vs. 09 web: $p < .0001$] [10 web vs. 10 phone: $p = .5916$]

e31_CI_3 We should agree to accept internationally established limits on US production of carbon dioxide and other greenhouse gases thought to cause global warming.

	Strongly Disagree						Strongly Agree	
%	1	2	3	4	5	6	7	Mean
10 web	13	5	7	21	19	14	21	4.56
09 web	10	5	7	21	22	16	20	4.68
08 web	9	5	6	22	20	17	20	4.69
08 phone	17	6	8	9	17	13	30	4.61
07 web	8	4	8	20	22	17	21	4.78
06 web	8	6	7	22	21	16	21	4.76
06 phone	12	4	7	10	19	16	31	4.92

[10 web vs. 09 web: $p = .0550$]

e32_capinfo: On a scale from zero to ten, where zero means *nothing* and ten means *a great deal*, how much, if anything, have you heard about a policy being considered by the president and Congress called "cap-and-trade" that would set limits on carbon dioxide emissions?

	Nothing										A Great Deal	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	19	3	6	7	7	16	9	11	8	4	10	4.76

e33_capspt: Under the cap-and-trade proposal, the federal government would limit the amount of greenhouse gases that companies could produce in their factories or power plants. If companies exceed those limits, they would either pay a fine or pay money to other companies that produced smaller amounts of greenhouse gases. On a scale from one to seven, where one means *strongly oppose* and seven means *strongly support*, how do you feel about the cap-and-trade proposal?

	Strongly Oppose						Strongly Support	
%	1	2	3	4	5	6	7	Mean
10 web	15	5	8	21	21	14	17	4.38

e34_capcost: Using the same scale from one to seven, where one means *strongly oppose* and seven means *strongly support*, if a cap-and-trade program significantly lowered greenhouse gas emissions but raised your monthly electrical bill by (random: $5, $10, $25, $50, $75, $100, $125) per month, how would you feel about that program?

	Strongly Oppose			WEB 2010			Strongly Support	
%	1	2	3	4	5	6	7	Mean
$5	24	4	11	21	17	9	14	3.84
$10	24	9	9	20	18	9	11	3.73
$25	31	7	11	20	19	5	6	3.32
$50	37	14	12	21	9	3	5	2.77
$75	40	17	10	17	9	3	3	2.60
$100	43	12	12	16	9	2	5	2.63
$125	48	14	11	15	8	3	2	2.37

The next set of questions concerns all kinds and uses of energy, including electricity for homes and businesses; gas, oil, and coal for heating; and transportation fuels, such as gasoline and diesel.

Considering the effects of both normal operations and potential accidents, how do you rate the risks to society and the environment from each of the following sources of energy using a scale from zero to ten, where zero means *no risk* and ten means *extreme risk*? [e35–e37 Randomized]

e35_ersk1 The risks from fossil fuels, such as coal, oil, and natural gas?

	No Risk										Extreme Risk	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	4	3	6	6	8	16	12	12	12	8	13	5.99
09 web	3	2	4	5	6	15	11	15	16	10	12	6.42
08 web	2	2	4	5	6	17	13	14	16	8	13	6.36
08 phone	4	1	4	6	7	14	8	14	18	6	17	6.45
07 web	2	2	3	4	5	13	10	16	16	11	16	6.73
06 web	2	2	5	5	5	17	12	17	15	10	11	6.40
06 phone	3	1	3	5	5	16	11	17	18	8	13	6.53

[10 web vs. 09 web: $p < .0001$]

e36_ersk2 The risks from nuclear power plants?

	No Risk										Extreme Risk	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	4	5	8	8	6	15	9	10	12	8	15	5.90
09 web	3	3	6	5	6	12	10	12	13	11	20	6.51
08 web	2	3	6	5	5	10	8	13	15	11	23	6.86
08 phone	6	3	7	7	8	14	7	12	13	6	17	5.90
07 web	3	5	6	7	6	14	10	11	13	10	16	6.14
06 web	2	4	6	7	6	11	9	11	13	10	20	6.50
06 phone	3	1	4	5	6	11	7	10	17	10	27	6.99

[10 web vs. 09 web: $p < .0001$]

e37_ersk3 The risks from renewable sources of energy, such as from hydroelectric dams, solar power, and wind generation?

	No Risk										Extreme Risk	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	21	18	16	9	6	11	5	4	3	3	4	3.00
09 web	31	21	15	8	4	8	4	3	2	2	2	2.29
08 web	24	23	16	9	6	8	4	3	3	2	3	2.55
08 phone	26	11	19	14	6	10	3	3	4	1	4	2.82
07 web	27	22	17	10	4	8	3	3	2	1	3	2.35
06 web	21	19	18	10	7	10	3	4	3	1	3	2.81
06 phone	21	10	15	13	9	11	4	4	6	2	5	3.38

[10 web vs. 09 web: $p < .0001$]

Please respond to the following statements using a continuous scale from one to seven, where one means *strongly disagree* and seven means *strongly agree*. [e38–e41 Randomized]

e38_nucgg: Nuclear power plants produce significant amounts of greenhouse gases.

	Strongly Disagree						Strongly Agree	
%	1	2	3	4	5	6	7	Mean
10 web	16	12	11	26	14	9	12	3.87
09 web	17	12	13	25	15	8	9	3.70

[10 web vs. 09 web: $p = .0063$]

e39_explode: Spent nuclear fuel can accidentally explode like a nuclear bomb.

%	Strongly Disagree 1	2	3	4	5	6	Strongly Agree 7	Mean
10 web	19	10	9	23	16	10	14	3.92

e40_tan: A suntan is caused by radiation damage to human skin.

%	Strongly Disagree 1	2	3	4	5	6	Strongly Agree 7	Mean
10 web	6	6	6	17	17	20	27	5.02

e41_radrsk: Even if the dose is the same, man-made radiation is more toxic to humans than naturally occurring radiation.

%	Strongly Disagree 1	2	3	4	5	6	Strongly Agree 7	Mean
10 web	13	7	7	25	17	15	16	4.36

e42_depd Using a scale from zero to ten, where zero means *not at all important* and ten means *extremely important,* how important is it to reduce US dependence on foreign sources of energy of all types?

%	Not at All Important 0	1	2	3	4	5	6	7	8	9	Extremely Important 10	Mean
10 web	1	0	0	1	2	8	6	11	14	14	43	8.28
10 phone	2	0	0	1	1	5	4	8	17	9	52	8.56
09 web	0	0	0	1	2	6	4	8	15	11	52	8.65
08 web	0	0	1	1	2	5	5	9	11	13	53	8.65
08 phone	1	0	1	0	1	3	3	6	12	10	64	9.04
07 web	0	0	0	1	1	5	4	10	17	15	46	8.60
06 web	0	0	1	1	1	5	4	10	17	15	46	8.61
06 phone	2	0	1	1	1	3	3	7	14	13	56	8.79
01 phone	2	1	1	3	2	10	6	10	22	11	33	7.79

[10 web vs. 09 web: $p < .0001$] [10 web vs. 10 phone: $p = .0056$]

Now think about the overall mix of energy sources for the US. We currently get about 85 percent of our energy from fossil fuels, 8 percent from nuclear energy, and 6 percent from renewable sources. The following three questions concern how you would like to see this mix of energy sources change over the next 20 years. Please tell me approximately what percentage of the total US energy supply you would like to see come from each of these three energy sources. [e43–e45 Randomized]

e43_20yrs1 What percent of our energy should come from fossil fuels, which currently provide about 85 percent of our energy?

%	Fossil Fuels (Mean)
10 web	34.1
09 web	24.9
08 web	26.5
08 phone	28.9
07 web	25.3
06 web	26.6
06 phone	31.3

[10 web vs. 09 web: $p < .0001$]

e44_20yrs2 What percent of our energy should come from nuclear energy, which currently provides about 8 percent of our energy?

%	Nuclear Energy (Mean)
10 web	20.2
09 web	22.4
08 web	21.9
08 phone	24.4
07 web	23.6
06 web	22.0
06 phone	22.2

[10 web vs. 09 web: $p = .0009$]

e45_20yrs3 What percent of our energy should come from renewable sources, which currently provide about 6 percent of our energy?

%	Renewable Sources (Mean)
10 web	45.8
09 web	52.1
08 web	51.9
08 phone	47.2
07 web	51.0
06 web	51.4
06 phone	46.3

[10 web vs. 09 web: $p < .0001$]

[Arguments Randomized]

Some people argue that regardless of the future mix of energy sources, we must also significantly reduce energy consumption.

Some people think that significantly reducing energy consumption limits economic growth and is not practical.

e46_needs Considering both arguments and using the slider scale below, where zero means *place all efforts on reducing energy consumption* and ten means *place all efforts on developing the energy mix you identified above*, what strategy would you prefer? Notice that as you move the slider to each scale number, the resulting balance is displayed.

	All Efforts on Conservation										All Efforts on Development	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	2	1	2	3	7	31	12	15	13	4	10	6.19
09 web	2	1	2	4	7	25	12	17	13	5	12	6.29

[10 web vs. 09 web: $p = .2093$]

There is another important debate about the energy future that we want you to consider. [Randomized]

Some people *oppose* further developing US deposits of oil and gas. They argue that doing so increases greenhouse gas emissions, harms the environment, and reduces the economic incentives for developing alternative sources of energy that are cleaner.

Some people *support* further developing US deposits of oil and gas. They argue that doing so keeps energy prices lower, reduces dependence on foreign sources, and gains time for developing alternative sources of energy that are cleaner.

e47_explore Considering both arguments and using a scale from one to seven where one means *strongly oppose* and seven means *strongly support*, how do you feel about further exploring and developing US deposits of oil and gas?

	Strongly Oppose						Strongly Support	
%	1	2	3	4	5	6	7	Mean
10 web	7	5	11	24	20	11	22	4.67
09 web	6	6	10	26	20	11	21	4.64

[10 web vs. 09 web: $p = .5990$]

The recent oil spill in the Gulf of Mexico raises concerns about off-shore drilling near the U.S. coastline.

[Arguments Randomized]

Opponents of off-shore drilling argue that potential damages to the environment and the U.S. economy mean that we should not allow additional off-shore oil and gas drilling near the U.S. They say that enhanced safety measures and government regulations will not eliminate dangers, and buying oil from other countries is better than risking environmental and economic damages.

Supporters of off-shore drilling argue that much of remaining U.S. oil and gas deposits exists near our shores, and we must continue drilling in those areas to reduce dependence on oil from other countries. They say that additional safety measures and more effective regulations can reduce the risks of off-shore drilling and that U.S. security requires reducing our dependence on foreign oil.

e47a_Gulf On a scale from one to seven where one means *strongly oppose* and seven means *strongly support*, how do you feel about drilling additional oil and gas wells off-shore near the U.S. coastline?

	Strongly Oppose						Strongly Support	
%	1	2	3	4	5	6	7	Mean
10 web	16	9	11	21	17	9	16	4.07

There are never enough research and development funds for all worthy energy projects, so difficult choices have to be made. Following is a list of ten areas in which investments might produce energy benefits. Please rate the importance of each energy technology on a scale from zero to ten where zero means *not at all important* and ten means *extremely important*. [e48–e57 Randomized]

[after e48–e57 answered …]

Now that you have rated the importance of each of these energy technologies, we need you to rank them from highest to lowest priority for research and development funding. Please use the drop-down boxes to assign a priority number from 10 (highest priority) to 1 (lowest priority) indicating the priority you think each energy technology should receive for research and development funding. You can use a priority number only once, and you must assign a priority number for each listing before you can advance to the next page. Please consider the entire list before beginning to rank priorities. [e48a–e57a Randomized]

e48_CC Clean coal technologies to reduce or eliminate emissions of greenhouse gases when coal is burned

	Not at All Important										Extremely Important	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	4	3	4	5	6	15	12	14	15	9	15	6.38

e48a_CC_rank

	Lowest Priority									Highest Priority	
%	1	2	3	4	5	6	7	8	9	10	Mean
10 web	13	17	12	10	11	9	7	7	6	8	4.68

e49_NE Nuclear generation technologies to increase the efficiencies of nuclear energy generation while reducing associated risks

	Not at All Important										Extremely Important	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	4	2	4	5	7	15	11	15	15	9	13	6.28

e49a_NE_rank

	Lowest Priority									Highest Priority	
%	1	2	3	4	5	6	7	8	9	10	Mean
10 web	17	14	11	11	9	7	7	7	9	7	4.71

e50_BI Biomass fuels technologies to increase the efficiencies of growing and burning biomass materials (such as plant matter) for energy

	Not at All Important										Extremely Important	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	2	2	3	4	6	15	11	15	16	10	15	6.58

e50a_BI_rank

	Lowest Priority									Highest Priority	
%	1	2	3	4	5	6	7	8	9	10	Mean
10 web	12	13	13	13	11	12	10	8	4	4	4.67

e51_WD Wind generation technologies to increase the efficiencies of generating electricity from the wind

	Not at All Important										Extremely Important	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	2	1	1	3	3	10	7	11	16	15	32	7.68

e51a_WD_rank

	Lowest Priority									Highest Priority	
%	1	2	3	4	5	6	7	8	9	10	Mean
10 web	6	5	5	6	7	10	12	13	21	16	6.85

e52_SO Solar generation technologies to increase the efficiencies of generating electricity from the sun

	Not at All Important										Extremely Important	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	1	1	1	2	3	9	7	10	17	16	33	7.87

e52a_SO_rank

	Lowest Priority									Highest Priority	
%	1	2	3	4	5	6	7	8	9	10	Mean
10 web	3	4	5	5	7	9	9	12	19	27	7.35

e53_HY Hydro generation technologies to increase the efficiencies of generating electricity from the movement of water

	Not at All Important										Extremely Important	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	1	0	1	2	4	11	11	13	18	15	25	7.54

e53a_HY_rank

	Lowest Priority									Highest Priority	
%	1	2	3	4	5	6	7	8	9	10	Mean
10 web	3	5	6	9	11	13	16	18	12	7	6.32

e54_GE Geothermal technologies to increase the efficiencies of using energy naturally generated by the earth's core

	Not at All Important										Extremely Important	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	2	1	2	2	6	13	10	16	18	11	20	7.15

e54a_GE_rank

	Lowest Priority									Highest Priority	
%	1	2	3	4	5	6	7	8	9	10	Mean
10 web	8	8	9	13	12	12	13	11	7	6	5.41

e55_OL Oil and gas exploration technologies to increase the efficiencies of finding and extracting our own oil and gas deposits

	Not at All Important										Extremely Important	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	5	4	4	5	6	17	11	13	12	9	14	6.15

e55a_OL_rank

	Lowest Priority									Highest Priority	
%	1	2	3	4	5	6	7	8	9	10	Mean
10 web	20	12	13	9	8	6	7	7	6	12	4.75

e56_FC Fuel cell technologies to produce energy from chemical reactions of various elements such as hydrogen or other gases

	Not at All Important										Extremely Important	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	3	1	3	5	7	15	14	14	14	10	14	6.50

e56a_FC_rank

	Lowest Priority									Highest Priority	
%	1	2	3	4	5	6	7	8	9	10	Mean
10 web	11	14	13	14	11	10	8	7	8	5	4.79

e57_TR Electrical distribution technologies to increase the efficiencies of transmitting and distributing electricity

	Not at All Important										Extremely Important	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	1	1	1	2	5	13	10	16	18	12	20	7.21

e57a_TR_rank

	Lowest Priority									Highest Priority	
%	1	2	3	4	5	6	7	8	9	10	Mean
10 web	8	7	10	11	13	12	11	10	9	10	5.69

The next set of questions focuses specifically on the possible risks and benefits of nuclear energy.

First, I want to ask about your beliefs about some of the possible risks associated with nuclear energy use in the US. Please consider both the likelihood of a nuclear event occurring and its potential consequences when evaluating the risk posed by each of the following on a scale from zero to ten where zero means *no risk* and ten means *extreme risk.* [e58–e61 Randomized]

e58_nrsk1 An accident at a US nuclear power plant within the next 20 years that results in the release of large amounts of radioactivity.

	No Risk									Extreme Risk		
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	2	6	7	7	6	14	10	10	11	10	18	6.19
09 web	2	6	7	7	4	13	9	10	12	9	21	6.35
08 web	3	6	7	6	5	12	8	14	12	8	20	6.29
08 phone	4	8	10	11	8	17	6	7	9	2	18	5.34
07 web	2	5	7	6	7	13	10	11	12	8	18	6.17
06 web	3	5	7	8	6	14	9	9	11	8	19	6.19
06 phone	3	6	9	8	7	14	6	9	10	4	24	6.06
02 phone	2	5	9	10	7	14	7	10	11	4	21	5.95

[10 web vs. 09 web: $p = .1303$]

e59_nrsk2 An accident during the transportation or storage of spent nuclear fuel from nuclear power plants in the US within the next 20 years that results in the release of large amounts of radioactivity.

	No Risk									Extreme Risk		
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	2	5	6	7	7	14	10	10	12	10	18	6.23
09 web	2	5	8	5	5	12	10	11	12	9	21	6.42
08 web	2	5	7	6	5	12	9	13	12	9	20	6.37
08 phone	4	7	8	9	7	16	8	10	9	3	20	5.72
07 web	2	4	8	6	8	13	9	13	13	8	16	6.19
06 web	1	4	6	7	7	15	11	11	12	9	18	6.34
06 phone	2	5	7	7	7	14	6	10	13	5	23	6.22
02 phone*	2	4	7	10	9	16	7	9	11	4	21	6.05

*"accident in the management of spent nuclear fuel" [10 web vs. 09 web: $p = .0664$]

e60_nrsk3 A terrorist attack at a US nuclear power plant within the next 20 years that results in the release of large amounts of radioactivity.

	No Risk									Extreme Risk		
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	2	3	5	6	6	13	8	11	12	10	24	6.72
09 web	2	4	5	6	5	13	8	10	14	9	25	6.77
08 web	2	3	5	5	6	12	10	12	12	9	24	6.76
08 phone	4	6	7	8	8	13	9	9	11	4	22	5.97
07 web	1	2	5	5	6	11	9	13	13	11	23	6.93
06 web	2	2	4	5	5	12	10	12	13	10	24	6.91
06 phone	2	3	5	7	5	12	7	11	11	6	30	6.83
02 phone	2	2	4	6	6	10	8	11	13	7	32	7.02

[10 web vs. 09 web: $p = .5686$]

e**61_nrsk4** The diversion of nuclear fuel from a nuclear power plant in the US within the next 20 years for the purpose of building a nuclear weapon.

	No Risk										Extreme Risk	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	5	7	8	7	8	14	9	10	10	8	14	5.63
09 web	6	6	7	6	7	14	10	10	8	8	18	5.80
08 web	4	7	7	7	6	13	10	14	10	6	17	5.86
08 phone	9	8	10	12	8	15	6	8	6	3	16	4.93
07 web	4	6	10	7	8	14	10	10	11	7	13	5.60
06 web	4	7	9	8	7	15	8	10	11	7	15	5.64
06 phone	6	6	9	8	7	14	6	9	10	4	22	5.75

[10 web vs. 09 web: p = .1215]

Now we want to know about your beliefs about some of the possible benefits associated with nuclear energy use in the US. Please evaluate the benefits associated with each of the following on a scale from zero to ten, where zero means *not at all beneficial* and ten means *extremely beneficial.* [e62–e65 Randomized]

e62_nben1 Fewer overall greenhouse gas emissions because nuclear energy production does not create greenhouse gases.

	Not At All Beneficial										Extremely Beneficial	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	2	1	2	3	5	14	10	13	16	13	20	7.06
09 web	3	1	1	3	4	15	10	12	15	12	23	7.13
08 web	2	1	2	2	6	15	11	14	17	10	21	7.05
08 phone	4	1	1	2	5	17	6	12	19	4	29	7.09
07 web	1	1	1	2	3	14	11	17	17	13	20	7.36
06 web	2	1	1	2	3	15	10	15	20	12	20	7.26
06 phone	4	2	2	3	3	15	9	13	17	7	24	6.89
02 phone	3	1	2	4	6	17	9	13	17	7	20	6.73

[10 web vs. 09 web: p = .4956]

e63_nben2 Reliable power because nuclear energy generates large amounts of electricity and is not affected by weather conditions, such as low rainfall or no wind.

	Not At All Beneficial										Extremely Beneficial	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	2	1	1	2	5	13	10	13	18	13	22	7.25
09 web	2	1	1	2	4	14	10	15	15	12	23	7.22
08 web	2	1	1	2	5	13	12	14	16	11	22	7.18
08 phone	4	0	2	2	3	13	7	11	20	9	30	7.38
07 web	1	1	1	1	2	12	11	17	18	15	20	7.46
06 web	2	1	1	2	3	13	10	16	18	14	21	7.34
06 phone	4	1	2	3	3	12	8	15	19	8	24	7.12
02 phone	2	1	2	3	4	15	8	15	21	7	22	7.11

[10 web vs. 09 web: p = .7032]

e**64_nben3** Greater US energy independence because nuclear energy production does not require oil or gas from foreign sources.

	Not At All Beneficial										Extremely Beneficial	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	2	1	1	2	4	12	9	13	17	13	25	7.41
09 web	2	1	2	2	5	13	9	13	15	14	25	7.36
08 web	2	1	1	2	4	13	10	15	16	12	25	7.31
08 phone	3	0	2	2	2	13	5	11	19	8	34	7.57
07 web	1	0	1	1	2	13	9	15	19	15	24	7.60
06 web	2	1	1	2	2	13	9	13	18	14	25	7.52
06 phone	3	2	2	3	3	12	8	12	19	9	26	7.20
02 phone	2	1	1	2	4	15	9	15	19	9	23	7.16

[10 web vs. 09 web: $p = .6209$]

e65_nben4 Reduced environmental damage because of less need for mining coal or extracting oil and gas.

	Not At All Beneficial										Extremely Beneficial	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	2	1	2	3	5	13	11	13	16	12	22	7.10
09 web	2	1	2	3	4	14	10	13	14	13	24	7.24
08 web	2	1	2	1	6	12	11	16	16	12	21	7.12
08 phone	2	0	2	4	3	14	8	14	18	6	29	7.30
07 web	1	0	1	2	3	14	10	16	19	13	21	7.43
06 web	2	1	2	3	3	13	11	16	18	11	21	7.18
06 phone	4	1	3	4	4	15	10	13	18	7	22	6.83

[10 web vs. 09 web: $p = .1219$]

e66_riskben Using a scale from one to seven, where one means the risks of nuclear energy far outweigh its benefits, four means the risks and benefits are equally balanced, and seven means the benefits of nuclear energy far outweigh its risks, how do you rate the overall balance of the risks and benefits of nuclear energy in the US? Remember, you can choose any number from one to seven.

	Risks > Benefits			Risks/Benefits Balanced			Benefits > Risks	
%	1	2	3	4	5	6	7	Mean
10 web	6	6	13	30	20	14	11	4.40
10 phone	6	4	6	24	17	14	29	5.01
09 web	7	6	13	32	17	13	12	4.35
08 web	5	7	13	31	19	13	12	4.38
08 phone	7	2	8	26	15	16	27	4.95
07 web	4	5	10	32	22	16	11	4.57
06 web	7	6	13	30	20	13	10	4.32
06 phone	8	6	7	24	22	16	18	4.64
02 phone	7	4	10	29	22	14	15	4.57

[10 web vs. 09 web: $p = .4168$] [10 web vs. 10 phone: $p < .0001$]

e67_new1 Using a scale from one to seven, where one means *strongly oppose* and seven means *strongly support*, how do you feel about constructing additional nuclear reactors at the sites of existing nuclear power plants in the US? [e67–e68 Randomized]

%	Strongly Oppose 1	2	3	4	5	6	Strongly Support 7	Mean
10 web	9	7	9	24	19	16	16	4.48
10 phone	16	3	8	12	15	9	38	4.85
09 web	11	7	9	23	18	13	18	4.41
08 web	10	7	12	25	21	11	14	4.29
08 phone	18	5	7	15	13	14	29	4.58
07 web	7	7	10	23	22	17	14	4.54
06 web	11	7	9	24	24	13	13	4.34
06 phone	18	6	10	12	16	14	24	4.40
02 phone	19	6	10	17	19	10	19	4.14

[10 web vs. 09 web: $p = .2343$] [10 web vs. 10 phone: $p = .0002$]

e68_new2 Using the same scale from one to seven, where one means *strongly oppose* and seven means *strongly support*, how do you feel about constructing additional nuclear power plants at new locations in the US?

%	Strongly Oppose 1	2	3	4	5	6	Strongly Support 7	Mean
10 web	12	9	11	21	17	14	17	4.29
10 phone	17	6	9	14	14	10	29	4.49
09 web	14	8	10	21	16	13	18	4.29
08 web	12	9	13	21	18	12	15	4.19
08 phone	21	6	9	15	13	10	27	4.29
07 web	9	9	12	20	19	16	15	4.40
06 web	14	8	11	22	17	14	14	4.16
06 phone	25	10	10	11	12	11	21	3.92
02 phone	25	8	12	15	15	9	16	3.77

[10 web vs. 09 web: $p = .9386$] [10 web vs. 10 phone: $p = .0457$]

e69_near To the best of your knowledge, is your primary residence located within approximately 100 miles of an operating nuclear power plant?

%	No 0	Yes 2	Don't Know 3	Correct	Incorrect
10 web	45	32	23		

e70_disp As nuclear fuel is used to generate electricity, it becomes contaminated with radioactive byproducts. When it can no longer efficiently produce electricity, it is called used or spent nuclear fuel. To the best of your knowledge, what is currently being done with most of the spent nuclear fuel produced in the US? Is it: [Randomized]

%	2010 web	2010 phone	2009 web	2008 web	2008 phone	2007 web	2006 web	2006 phone
1 - Stored in special containers at nuclear power plants throughout the US	32	29	25	22	23	22	20	20
2 - Shipped to Nevada and stored in a facility deep underground	28	38	32	32	47	33	33	43
3 - Chemically reprocessed and reused	15	11	17	17	7	13	13	10
4 - Shipped to regional storage sites	25	22	26	30	23	31	34	26

e71_casks: To the best of your knowledge, is spent nuclear fuel being stored above ground at any nuclear power plant within your state?

	No	Yes	Don't Know		
%	0	2	3	Correct	Incorrect/DK
10 web	30	10	59	12	88

Spent nuclear fuel is highly radioactive and must be safeguarded for thousands of years or chemically reprocessed. If it is reprocessed, the uranium can be separated from the waste and reused to make new fuel rods for generating electricity, but the remaining elements are highly radioactive for a very long time and must be safeguarded and isolated from the environment for thousands of years.

In 2010 the government halted construction of a deep underground facility inside Yucca Mountain in Nevada that had been intended for long-term disposition of spent nuclear fuel, and very little spent nuclear fuel is being reprocessed in the U.S.

Currently, US spent nuclear fuel is being temporarily stored at over 100 sites in 39 states. Most of it is stored at nuclear power plants where it is placed in secure cooling pools. In some cases, the spent fuel is transferred to specialized concrete casks stored above ground near the nuclear power plant. At each site, the cooling pools and storage casks are protected at all times by security forces. Some people think this is an acceptable solution for the foreseeable future, while others think such practices are risky and other options need to be adopted.

[following arguments randomized]

Opponents argue that some nuclear power plants where spent nuclear fuel is stored are near rivers, oceans, and large population centers. On rare occasions spent fuel has leaked radiation into the cooling pools. Moreover, the cooling pools and containers are located at ground level, and therefore might be vulnerable to terrorists. They note that these storage practices do not provide a permanent solution for managing spent nuclear fuel.

Supporters argue that transporting spent nuclear fuel by train or truck to consolidated storage facilities is risky, that storing spent nuclear fuel at nuclear power plants is less expensive than consolidated storage, and that it buys time for finding future solutions. Moreover, storage at nuclear power plants has not caused any accidents that have exposed the public to radiation.

e72_opt1 Using a scale from one to seven, where one means *strongly oppose* and seven means *strongly support*, how do you feel about the current practice of storing spent nuclear fuel at or near nuclear power plants?

%	Strongly Oppose 1	2	3	4	5	6	Strongly Support 7	Mean
10 web	12	10	17	34	17	5	4	3.65
09 web	14	10	21	32	15	4	4	3.54
08 web	12	12	21	30	15	5	5	3.58
08 phone	25	11	14	17	17	6	11	3.51
07 web	10	12	19	34	17	4	3	3.60
06 web	10	11	22	35	15	4	3	3.56
06 phone	22	10	14	14	19	8	13	3.73

[10 web vs. 09 web: $p = .0418$]

Now we want your general views about various options for future management of spent nuclear fuel. There are no right or wrong answers, and it is not necessary that you have expert knowledge about these issues. We are interested in what you think about some of the choices that must be made about managing radioactive materials.

First we want you to consider the number of storage sites for spent nuclear fuel. While nuclear power plants will continue to store some spent fuel in their cooling pools, much of the radioactive materials currently at temporary storage sites in 39 states might be consolidated at a smaller number of regional or central facilities. Once it is consolidated, the spent nuclear fuel can more easily be secured and protected from attack. The fewer the number of regional or central storage facilities, the less complex are the political and legal obstacles for finding communities willing and able to host the facilities. At the same time, a larger number of regional storage facilities would reduce the distances radioactive materials must be transported by train or truck, and would also reduce the number of communities through which the transport routes would pass.

Please respond to the three following policy options on a scale from one to seven, where one means *strongly oppose* and seven means *strongly support.* [e73–e75 Randomized]

[after e73–e75 are answered …]

Now that you have recorded your level of support or opposition to each of these three policy choices, we need you to rank them from the *most* preferred to the *least* preferred. Please use the drop-down boxes to assign a preference number from 3 (most preferred) to 1 (least preferred). You can use a priority number only once, and you must assign a priority number for each listing before you can advance to the next page. Please consider the entire list before beginning to rank priorities. [e73a–e75a Randomized]

e73_nmbrs1 After spent nuclear fuel is removed from the cooling pools, continue the current practice of temporarily storing it above ground at designated nuclear power plants. This option does not require additional transportation of radioactive materials by train or truck, and it presents few additional political or legal obstacles.

	Strongly Oppose						Strongly Support	
%	1	2	3	4	5	6	7	Mean
10 web	8	8	13	31	21	12	8	4.15

e73a_nmbrs1_rank

	Least Preferred		Most Preferred	
%	1	2	3	Mean
10 web	36	21	43	2.08

e74_nmbrs2 Construct six to eight regional storage sites that can be more easily secured and can provide longer-term storage. This option requires transporting spent nuclear fuel by train or truck over moderate distances and is likely to generate political and legal opposition.

	Strongly Oppose						Strongly Support	
%	1	2	3	4	5	6	7	Mean
10 web	8	8	13	29	22	13	7	4.18

e74a_nmbrs2_rank

	Least Preferred		Most Preferred	
%	1	2	3	Mean
10 web	20	52	29	2.09

e75_nmbrs3 Construct two large centralized storage sites (one in the west and one in the east) that can be most secure and provide permanent storage. This option requires transporting spent nuclear fuel by train or truck over longer distances and is likely to generate political and legal opposition.

	Strongly Oppose						Strongly Support	
%	1	2	3	4	5	6	7	Mean
10 web	12	12	14	27	16	11	9	3.91

e75a_nmbrs3_rank

	Least Preferred		Most Preferred	
%	1	2	3	Mean
10 web	45	27	28	1.84

Next we want you to consider the issue of reprocessing, which involves the chemical separation of radioactive materials in spent nuclear fuel. After reprocessing, most of the uranium and plutonium can be captured and reused to generate electricity, reducing the amount of uranium that must be

mined in the U.S. or purchased from other countries. Remaining materials are radioactive and must be safeguarded and isolated from the environment. However, reprocessing may also separate the plutonium which, like uranium, could be used to make nuclear weapons.

e76_reproc Using a scale from one to seven, where one means *strongly oppose* and seven means *strongly support*, how do you feel about the option for reprocessing spent nuclear fuel?

	Strongly Oppose						Strongly Support	
%	1	2	3	4	5	6	7	Mean
10 web	4	2	7	28	25	17	17	4.86
09 web	3	2	7	23	25	18	21	5.02
08 web	3	3	6	22	27	19	20	5.05
08 phone	8	4	7	14	22	16	29	5.01

[10 web vs. 09 web: $p = .0020$]

Now we want you to consider the issue of whether stored radioactive materials should be managed in a way that allows authorized personnel to gain access to them and retrieve the materials in the future, or that seeks to permanently block access to them. One option is to build facilities where the stored materials are continuously monitored and can be retrieved for reprocessing, or possibly to make them less dangerous using future technological developments. This option requires greater security efforts and may be more vulnerable to attack or theft. Another option is to attempt to seal off storage sites in such a way that people cannot readily gain access to the materials in the future. This option is more secure, but does not allow reprocessing or treatment by future technological advancements.

Using a scale from one to seven, where one means *strongly oppose* and seven means *strongly support*, please indicate how you feel about each of the following two options. [e77–e88 Randomized]

[after e77–e78 are answered …]

Now that you have recorded your level of support or opposition to each of these two policy choices, we need you to rank them from the *most* preferred to the *least* preferred. Please use the drop-down boxes to assign a preference number from 2 (most preferred) to 1 (least preferred). You can use a priority number only once, and you must assign a priority number for each listing before you can advance to the next page. [e77a–e78 Randomized]

e77_retrieve1: Construct sites so that stored materials are monitored and could be retrieved for reprocessing or further treatment in the future.

	Strongly Oppose						Strongly Support	
%	1	2	3	4	5	6	7	Mean
10 web	4	3	6	22	24	24	17	4.98

e77a_retrieve1_rank

	Least Preferred	Most Preferred
%	1	2
10 web	31	69

e78_retrieve2: Construct sites so that stored materials are permanently sealed away and cannot readily be retrieved in the future.

	Strongly Oppose						Strongly Support	
%	1	2	3	4	5	6	7	Mean
10 web	7	9	17	29	16	12	10	4.14

e78a_retrieve2_rank

	Least Preferred	Most Preferred
%	1	2
10 web	69	31

Next we want you to consider the issue of storage depth. There are three general options. [Randomized]

One option is to store spent nuclear fuel at or near the surface in hardened structures of concrete and steel. This allows monitoring and retrieval, but it is considered to provide a safe means to manage the material for only about a hundred years.

One option is to build mine-like storage facilities that are thousands of feet underground. These can be constructed to allow materials to be retrieved, or they can be designed to permanently block assess in the future. They are suitable for storage over thousands of years.

One option involves drilling multiple boreholes of about 1.5 feet in diameter and up to three miles deep. Spent nuclear fuel would be stored in the deepest parts of the boreholes that are in bedrock. There is almost no chance that the materials could migrate into the surface environment over thousands of years, and they would be extremely difficult to retrieve.

Please respond to the three following policy options on a scale from one to seven, where one means *strongly oppose* and seven means *strongly support*. [e79–e81 Randomized]

[after e79–e81 are answered …]

Now that you have recorded your level of support or opposition to each of these three policy choices, we need you to rank them from the *most* preferred to the *least* preferred. Please use the drop-down boxes to assign a preference number from 3 (most preferred) to 1 (least preferred). You can use a priority number only once, and you must assign apriority number for each listing before you can advance to the next page. Please consider the entire list before beginning to rank priorities. [e79–e81 Randomized]

e79_facility1 Construct storage facilities at or near the surface of the earth that are less permanent but allow retrieval for reprocessing, research, or other treatments.

	Strongly Oppose						Strongly Support	
%	1	2	3	4	5	6	7	Mean
10 web	8	10	14	26	20	14	8	4.16

e79a_facility1_rank

%	Least Preferred 1	2	3	Most Preferred Mean
10 web	37	37	27	1.90

e80_facility2: Construct storage facilities underground that are like mines that could be either permanently sealed or could allow materials to be retrieved.

%	Strongly Oppose 1	2	3	4	5	6	Strongly Support 7	Mean
10 web	4	4	6	22	22	23	18	4.92

e80a_facility2_rank

%	Least Preferred 1	2	3	Most Preferred Mean
10 web	14	37	49	2.34

e81_facility3: Construct very deep boreholes that afford permanent and safe disposal, but would make materials extremely difficult to be retrieved.

%	Strongly Oppose 1	2	3	4	5	6	Strongly Support 7	Mean
10 web	9	11	15	26	17	11	11	4.08

e81a_facility3_rank

%	Least Preferred 1	2	3	Most Preferred Mean
10 web	49	27	25	1.76

[Split design: half received e82_mines; half received e83_bore]

e82_mines For the next few questions, assume that construction of two underground mine-like storage facilities is being considered for the storage of spent nuclear fuel. One would be in the eastern U.S., and the other in the west. Each of these sites would include secure surface storage buildings and a mine several thousand feet deep where radioactive materials could be isolated from people and the environment and could be designed to allow retrieval or to permanently seal away the materials. The facilities and the mines would be designed to meet all technical and safety requirements set by the U.S. Nuclear Regulatory Commission, the U.S. Environmental Protection Agency, and applicable

state regulatory agencies. Using a scale from one to seven where one means *strongly oppose* and seven means *strongly support*, how do you feel about this option?

	Strongly Oppose						Strongly Support	
%	1	2	3	4	5	6	7	Mean
10 web	3	2	7	31	28	16	14	4.82
10 phone	15	6	10	10	18	15	26	4.60

[10 web vs. 10 phone: $p = .0625$]

e83_bore For the next few questions, assume that construction of about seven regional sites across the U.S. are being considered for the storage of spent nuclear fuel. Each of these sites will include secure surface storage buildings and a number of deep boreholes drilled up to three miles deep into bedrock where the radioactive materials could be isolated permanently from people and the environment. The facilities and boreholes would be designed to meet all technical and safety requirements set by the U.S. Nuclear Regulatory Commission, the U.S. Environmental Protection Agency, and applicable state regulatory agencies. Using a scale from one to seven, where one means *strongly oppose* and seven means *strongly support*, how do you feel about this option?

	Strongly Oppose						Strongly Support	
%	1	2	3	4	5	6	7	Mean
10 web	5	6	8	32	26	14	10	4.49
10 phone	14	8	8	14	15	17	25	4.60

[10 web vs. 10 phone: $p = .3661$]

Now we want you to consider how your support would be affected by more specific information. Please respond to each of the following questions on a scale from one to seven, where one means the information would *greatly decrease* your support and seven means it would *greatly increase* your support. [e84–e86 Randomized]

e84_lab What would happen to your level of support if you learned that each of the sites also would contain a national research laboratory for studying ways to more safely and efficiently manage and dispose of nuclear materials?

	Greatly Decrease						Greatly Increase	
%	1	2	3	4	5	6	7	Mean
2010 WEB								
e82_mines	2	3	4	22	25	25	20	5.19
e83_bore	1	2	6	22	26	24	19	5.17
2010 PHONE								
e82_mines	5	3	3	9	15	19	46	5.68
e83_bore	6	3	4	13	12	16	47	5.57

[e82_mines: 10 web vs. 10 phone: $p < .0001$] [e83_bore: 10 web vs. 10 phone: $p = .0003$]

e85_reuse: What would happen to your level of support if you learned that each of the sites also would include facilities for reprocessing spent nuclear fuel for reuse in generating electricity?

%	Greatly Decrease 1	2	3	4	5	6	Greatly Increase 7	Mean
2010 WEB								
e82_mines	3	3	6	26	27	20	15	4.92
e83_bore	2	4	7	25	25	21	16	4.92
2010 PHONE								
e82_mines	6	4	5	7	17	19	43	5.52
e83_bore	7	3	3	8	15	18	47	5.62

[e82_mines: 10 web vs. 10 phone: $p < .0001$] [e83_bore: 10 web vs. 10 phone: $p < .0001$]

e86_comp What would happen to your level of support if you learned that each of the states hosting the sites would receive several billion dollars a year, paid for by revenues from nuclear energy, that could be used for hospitals, roads, and schools in that state.

%	Greatly Decrease 1	2	3	4	5	6	Greatly Increase 7	Mean
2010 WEB								
e82_mines	4	4	7	27	23	18	16	4.80
e83_bore	5	4	8	22	26	19	16	4.82
2010 PHONE								
e82_mines	11	3	6	15	20	10	35	4.98
e83_bore	11	7	6	12	13	12	39	5.01

[e82_mines: 10 web vs. 10 phone: $p = .1281$] [e83_bore: 10 web vs. 10 phone: $p = .1426$]

e87_nmby1: What would happen to your level of support if you learned that one of these sites is to be located in your state?

%	Greatly Decrease 1	2	3	4	5	6	Greatly Increase 7	Mean
2010 WEB								
e82_mines	8	9	10	35	19	11	8	4.15
e83_bore	10	6	13	31	18	13	9	4.16
2010 PHONE								
e82_mines	16	3	4	17	17	14	28	4.68
e83_bore	19	5	4	11	13	12	36	4.75

[e82_mines: 10 web vs. 10 phone: $p < .0001$] [e83_bore: 10 web vs. 10 phone: $p < .0001$]

e88_nmby2: What would happen to your level of support if you learned that one of these sites is to be located (random: 50, 100, 300) miles from your principle residence? [for phone: only 50 or 300]

2010 WEB

%	Greatly Decrease 1	2	3	4	5	6	Greatly Increase 7	Mean
e82_mines								
50 miles	18	10	10	36	13	7	5	3.59
100 miles	15	9	8	33	16	12	8	3.92
300 miles	12	7	12	34	16	12	8	4.02
e83_bore								
50 miles	20	8	14	26	17	9	6	3.64
100 miles	17	9	9	30	15	13	8	3.87
300 miles	13	8	12	30	18	12	8	3.99

[**e82_mines:** 50 miles vs. 100 miles: p = .0300; 50 miles vs. 300 miles: p = .0038; 100 miles vs. 300 miles: p = .5271]
[**e83_bore:** 50 miles vs. 100 miles: p = .1445; 50 miles vs. 300 miles: p = .0317; 100 miles vs. 300 miles: p = .4680]

2010 PHONE

%	Greatly Decrease 1	2	3	4	5	6	Greatly Increase 7	Mean
e82_mines								
50 miles	20	14	9	10	14	6	27	4.10
300 miles	22	5	5	18	13	13	23	4.27
e83_bore								
50 miles	26	5	7	11	14	9	28	4.22
300 miles	23	8	1	19	8	14	26	4.26

[**e82_mines:** 50 miles vs. 300 miles: p = .5925] [**e83_bore:** 50 miles vs. 300 miles: p = .9078]

[**e82_mines:** 10 web vs. 10 phone @ 50 miles: p = .0370; 10 web vs. 10 phone @ 300 miles: p = .1789]
[**e83_bore:** 10 web vs. 10 phone @ 50 miles: p = .0060; 10 web vs. 10 phone @ 300 miles: p = .2782]

Managing spent nuclear fuel and other radioactive materials can be technically complex, and getting information you can trust is important. Using a scale from zero to ten, where zero means *no trust* and ten means *complete trust*, please indicate your level of trust in information provided by science and engineering experts from each of the following organizations. [e89–e95 Randomized]

e89_NRC The U.S. Nuclear Regulatory Commission

%	No Trust 0	1	2	3	4	5	6	7	8	9	Complete Trust 10	Mean
10 web	6	3	5	6	9	21	11	13	13	7	6	5.56

e90_EPA The U.S. Environmental Protection Agency

%	No Trust 0	1	2	3	4	5	6	7	8	9	Complete Trust 10	Mean
10 web	8	4	6	5	8	18	12	12	14	7	7	5.55

e91_labs U.S. government-owned energy and national security laboratories

	No Trust										Complete Trust	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	9	5	6	7	11	20	11	12	10	5	5	5.00

e92_NAS The National Academy of Sciences

	No Trust										Complete Trust	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	4	2	4	5	9	20	12	14	15	9	7	5.98

e93_state State regulatory agencies

	No Trust										Complete Trust	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	8	4	7	9	11	21	13	11	8	4	3	4.81

e94_NGO Environmental advocacy groups, such as the National Resources Defense Council or the Sierra Club

	No Trust										Complete Trust	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	10	5	6	6	9	19	10	12	11	6	6	5.14

e95_NEI The Nuclear Energy Institute, which represents the nuclear power industry

	No Trust										Complete Trust	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	8	4	5	7	11	21	12	12	11	5	5	5.14

Now we want to know more about impressions you may have about how these organizations are likely to assess risks associated with managing radioactive materials, such as spent nuclear fuel. Using a scale from one to seven, where one means the organization is likely to *downplay* risks, four means the organization is likely to *accurately assess* risks, and seven means the organization is likely to *exaggerate* risks, please rate your impressions of how each organization is likely to assess risks. [e89a–e95a Randomized]

e89a_NRC_rsk The U.S. Nuclear Regulatory Commission

	Downplay Risks			Accurately Report Risks			Exaggerate Risks	
%	1	2	3	4	5	6	7	Mean
10 web	9	8	21	45	10	5	3	3.64

e90a_EPA_rsk The U.S. Environmental Protection Agency

	Downplay Risks			Accurately Report Risks			Exaggerate Risks	
%	1	2	3	4	5	6	7	Mean
10 web	7	6	14	39	17	10	7	4.12

e91a_labs_rsk U.S. government-owned energy and national security laboratories

	Downplay Risks			Accurately Report Risks			Exaggerate Risks	
%	1	2	3	4	5	6	7	Mean
10 web	12	12	23	33	10	5	4	3.49

e92a_NAS_rsk The National Academy of Sciences

	Downplay Risks			Accurately Report Risks			Exaggerate Risks	
%	1	2	3	4	5	6	7	Mean
10 web	4	4	11	57	15	6	3	4.06

e93a_state_rsk State regulatory agencies

	Downplay Risks			Accurately Report Risks			Exaggerate Risks	
%	1	2	3	4	5	6	7	Mean
10 web	10	10	22	33	15	6	4	3.66

e94a_NGO_rsk Environmental advocacy groups, such as the National Resources Defense Council or the Sierra Club

	Downplay Risks			Accurately Report Risks			Exaggerate Risks	
%	1	2	3	4	5	6	7	Mean
10 web	4	3	8	28	21	17	19	4.85

e95a_NEI_rsk The Nuclear Energy Institute, which represents the nuclear power industry

	Downplay Risks			Accurately Report Risks			Exaggerate Risks	
%	1	2	3	4	5	6	7	Mean
10 web	17	16	22	31	7	4	2	3.15

The next several questions are about your beliefs concerning a variety of issues.

e96_environ On a scale where zero means the natural environment is *not at all threatened* and ten means the natural environment is on the *brink of disaster*, how do you assess the current state of the natural environment?

	Not At All Threatened										Brink of Disaster	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	2	3	5	7	7	20	18	18	11	4	5	5.73
09 web	2	2	4	5	7	17	19	22	12	3	7	6.01
08 web	2	1	3	6	7	18	19	21	12	4	7	6.04
08 phone	4	4	3	6	7	19	13	20	13	2	10	5.87
02 phone	1	1	3	5	6	19	16	18	14	6	11	6.40
01 phone	1	2	3	7	9	18	16	17	14	5	10	6.22
97 phone	1	3	4	8	10	17	14	19	11	4	9	5.95

[10 web vs. 09 web: $p = .0004$]

e97_doright On a scale from zero to ten, where zero means *none of the time* and ten means *all of the time*, how much of the time do you trust the government in Washington to do what is right for the American people?

	None of the Time										All of the Time	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	14	10	12	13	11	17	9	7	3	1	2	3.66
09 web	10	8	13	14	10	19	12	7	4	1	2	3.94
08 web	12	10	17	16	11	14	8	6	3	1	2	3.53
08 phone	18	7	12	14	8	17	9	8	3	2	3	3.68
07 web	9	8	14	16	10	16	12	10	4	1	1	3.93
06 web	7	9	12	15	10	16	13	9	5	2	1	4.09
06 phone	10	8	10	11	12	19	10	8	7	1	3	4.16

[10 web vs. 09 web: $p = .0016$]

Now, please respond to each of the following statements using a scale from one to seven, where one means *strongly disagree* and seven means *strongly agree*. [e98–106 Randomized]

e98_egal_1 What society needs is a fairness revolution to make the distribution of goods more equal.

%	Strongly Disagree 1	2	3	4	5	6	Strongly Agree 7	Mean
10 web	17	7	11	24	17	14	11	4.04
09 web	14	8	11	22	18	14	13	4.18
08 web	11	9	12	24	19	12	14	4.21
08 phone	24	11	7	12	16	9	21	3.94
07 web	12	9	11	25	21	10	13	4.16
06 web	11	10	11	26	18	10	14	4.16
06 phone	16	11	9	14	17	11	24	4.30

[10 web vs. 09 web: $p = .0506$]

e99_indiv1 Even if some people are at a disadvantage, it is best for society to let people succeed or fail on their own.

%	Strongly Disagree 1	2	3	4	5	6	Strongly Agree 7	Mean
10 web	5	8	11	24	21	16	16	4.59
09 web	6	8	11	21	21	16	16	4.57
08 web	6	9	14	24	20	13	13	4.37
08 phone	11	9	9	12	19	11	28	4.64

[10 web vs. 09 web: $p = .7517$]

e100_hier1 The best way to get ahead in life is to work hard and do what you are told to do.

%	Strongly Disagree 1	2	3	4	5	6	Strongly Agree 7	Mean
10 web	4	5	9	25	23	20	14	4.76
09 web	4	4	10	23	23	19	17	4.84
08 web	4	6	10	23	25	19	13	4.70
08 phone	12	8	8	15	15	12	30	4.67

[10 web vs. 09 web: $p = .1632$]

e101_egal2 Society works best if power is shared equally.

%	Strongly Disagree 1	2	3	4	5	6	Strongly Agree 7	Mean
10 web	7	5	10	25	22	17	14	4.58
09 web	6	5	9	24	21	18	17	4.71
08 web	5	6	9	25	22	17	16	4.67
08 phone	11	6	9	12	18	16	28	4.79
07 web	5	7	10	25	23	16	15	4.62
06 web	6	7	9	25	22	16	15	4.58
06 phone	9	6	8	12	19	13	33	4.97

[10 web vs. 09 web: $p = .0418$]

e102_indiv2 Even the disadvantaged should have to make their own way in the world.

%	Strongly Disagree 1	2	3	4	5	6	Strongly Agree 7	Mean
10 web	6	7	14	25	22	15	12	4.42
09 web	6	8	13	24	22	13	13	4.40
08 web	6	10	17	25	21	12	10	4.22
08 phone	20	12	12	15	15	6	20	3.90

[10 web vs. 09 web: $p = .7935$]

e103_hier2 Society is in trouble because people do not obey those in authority.

%	Strongly Disagree 1	2	3	4	5	6	Strongly Agree 7	Mean
10 web	9	8	13	26	19	13	12	4.25
09 web	7	8	11	22	21	16	15	4.50
08 web	7	8	12	23	22	15	14	4.46
08 phone	21	9	9	13	16	10	22	4.12

[10 web vs. 09 web: $p < .0001$]

e104_egal3 It is our responsibility to reduce differences in income between the rich and the poor.

%	Strongly Disagree 1	2	3	4	5	6	Strongly Agree 7	Mean
10 web	17	10	11	22	17	12	11	3.91
09 web	15	9	10	21	16	12	16	4.16
08 web	12	10	10	21	19	13	15	4.24
08 phone	24	10	9	14	15	10	19	3.91
07 web	14	8	9	21	18	12	17	4.25
06 web	13	9	11	20	18	12	16	4.24
06 phone	19	9	10	12	14	9	28	4.31

[10 web vs. 09 web: $p = .0005$]

e105_indiv3 We are all better off when we compete as individuals.

%	Strongly Disagree 1	2	3	4	5	6	Strongly Agree 7	Mean
10 web	6	7	10	27	20	16	13	4.49
09 web	8	7	12	23	18	15	17	4.47
08 web	8	9	12	25	21	12	13	4.33
08 phone	12	8	7	14	16	13	30	4.73

[10 web vs. 09 web: $p = .7874$]

e106_hier3 Society would be much better off if we imposed strict and swift punishment on those who break the rules.

%	Strongly Disagree 1	2	3	4	5	6	Strongly Agree 7	Mean
10 web	4	4	8	20	23	18	24	5.03
09 web	3	4	7	19	21	19	28	5.19
08 web	3	5	9	19	22	20	23	5.06
08 phone	7	4	10	13	19	12	35	5.08

[10 web vs. 09 web: p = .0053]

e107_web Shifting now to a different topic, approximately how often do you access the Internet?

%	Never 0	< Once/ Month 1	Several Times/ Month 2	Once/ Week 3	Several Times/ Week 4	Once or Twice/Day 5	Several Times/ Day 6
10 web	0	0	1	2	7	26	63
09 web	0	0	1	3	6	20	69
08 web	0	0	1	2	7	22	67
08 phone	15	4	3	4	9	14	50
07 web	1	0	1	1	8	25	64
06 web	0	0	1	2	10	28	59
06 phone	11	10	4	7	14	18	37

Different people rely on different sources of information about public issues. On average, approximately how many hours per week do you spend acquiring information on public issues from each of the following sources?

e108_srce1 Newspapers?

	Trimmed Mean (50)
10 web	2.99
09 web	3.49
08 web	4.29
08 phone	3.87
07 web	4.70
06 web	4.23
06 phone	4.08

[10 web vs. 09 web: p = .0161]

e109_srce2 Broadcast or cable television?

	Trimmed Mean (50)
10 web	9.02
09 web	10.41
08 web	10.54
08 phone	8.26
07 web	10.41
06 web	9.49
06 phone	7.85

[10 web vs. 09 web: p = .0007]

e110_srce3 The Internet, including news sources, blogs, discussion groups, etc.?

	Trimmed Mean (50)
10 web	8.43
09 web	10.01
08 web	9.24
08 phone	4.61
07 web	8.56
06 web	7.67
06 phone	3.35

[10 web vs. 09 web: $p = .0002$]

Finally, I need some basic background information.

e111_zip What is the five digit zip code at your residence? (verbatim)

e112_party With which political party do you most identify?

%	Democratic 1	Republican 2	Independent 3	Other Party 4
10 web	35	28	36	2
10 phone	36	34	26	3
09 web	40	31	24	6
08 web	40	32	23	6
08 phone	41	37	16	6
07 web	37	34	23	6
06 web	36	34	22	8
06 phone	46	41	8	5

e113_iden Do you completely, somewhat, or slightly identify with that political party?

%	Slightly 1	Somewhat 2	Completely 3	Mean
10 web	10	58	32	2.23
10 phone	11	48	41	2.30
09 web	9	55	36	2.27
08 web	9	60	31	2.22
08 phone	14	50	36	2.23
07 web	14	60	26	2.12
06 web	13	62	25	2.12
06 phone	13	55	32	2.18

[10 web vs. 09 web: $p = .0541$]

e114_ideol On a scale of political ideology, individuals can be arranged from strongly liberal to strongly conservative. Which of the following best describes your views? Would you say that you are:

%	Strongly Liberal 1	Liberal 2	Slightly Liberal 3	Middle of the Road 4	Slightly Conserv. 5	Conserv. 6	Strongly Conserv. 7	Mean
10 web	5	13	12	33	13	16	7	4.14
10 phone	5	11	11	24	14	19	17	4.56
09 web	6	14	11	36	10	15	7	4.04
08 web	6	14	12	34	14	14	6	4.04
08 phone	5	14	8	27	16	20	11	4.37
07 web	5	12	11	35	15	16	6	4.16
06 web	4	13	12	34	14	16	7	4.18
06 phone	5	12	11	25	16	20	11	4.36

[10 web vs. 09 web: $p = .0787$] [10 web vs. 10 phone: $p < .0001$]

e115_race Which of the following best describes your race or ethnic background?

%	American Indian 1	Asian 2	Black 3	Hispanic 4	White 5	Something Else 6
10 web	1	4	6	3	85	1
10 phone	2	1	7	3	86	2
09 web	1	5	6	5	81	1
08 web	1	6	6	4	82	1
08 phone	3	2	5	3	85	1
07 web	1	3	4	2	89	1
06 web	1	3	5	4	86	1
06 phone	3	2	4	4	84	2

e116_inc Please indicate which of the following income categories approximates the total estimated annual income for your *household* for the year 2009.

%	<$10K 1	$10–20K 2	$20–30K 3	$30–40K 4	$40–50K 5	$50–60K 6	$60–70K 7
10 web	8	14	14	14	11	11	8
10 phone	3	6	11	8	10	9	8
09 web	6	10	13	11	10	12	10
08 web	7	10	12	10	9	12	10
08 phone	5	7	10	9	9	8	10
07 web	5	9	13	11	8	13	12
06 web	5	8	13	12	11	14	10
06 phone	3	7	11	10	11	11	10

%	$70–80K 8	$80–90K 9	$90–100K 10	$100–110K 11	$110–120K 12	$120–130K 13	$130–140K 14
10 web	6	4	3	2	2	1	1
10 phone	7	5	3	7	3	3	2
09 web	8	4	3	3	2	3	1
08 web	7	5	3	3	2	2	2
08 phone	9	6	3	4	3	3	3
07 web	6	5	5	4	2	2	1
06 web	7	5	3	3	2	2	1
06 phone	8	7	4	3	3	3	2

%	$140–150K 15	$150–160K 16	$160–170K 17	$170–180K 18	$180–190K 19	$190–200K 20	>$200K 21
10 web	1	0	0	0	0	0	1
10 phone	1	3	1	2	1	1	5
09 web	1	1	0	1	0	0	1
08 web	1	1	0	0	0	0	3
08 phone	2	1	1	1	0	2	4
07 web	1	0	0	0	0	1	1
06 web	2	1	0	0	0	1	1
06 phone	1	1	1	1	0	1	3

%	Median
10 web	$30–40K
10 phone	$60–70K
09 web	$50–60K
08 web	$50–60K
08 phone	$60–70K
07 web	$50–60K
06 web	$50–60K
06 phone	$50–60K

Appendix Three

Nuclear Security and Terrorism Data Summaries

Web: *n* = 1404; 17–18 May 2010; avg. time = 29 min

Phone: *n* = 582; 9 May—10 June 2010

s1_age How old are you?

	Means
10 web	45.9
10 phone	57.3
09 web	45.8
08 web	46.4
07 web	45.0
07 phone	51.9
06 web	45.9
05 web	49.4
05 phone	48.7
03 phone	47.6
01 phone	45.0
99 phone	44.0
97 phone	44.3
95 phone	42.2
93 phone	42.3

s2_edu What is the highest level of education you have completed?

%	**2010 web**	**2010 phone**	**2009 web**	**2008 web**	**2007 web**	**2007 phone**	**2006 web**	**2005 web**	**2005 phone**
< High school graduate	2	4	2	2	2	6	1	1	5
High school graduate	20	24	23	16	17	24	17	15	26
Some college/ vocational school	37	27	35	37	37	28	37	41	29
College graduate	25	24	25	27	26	23	26	24	25
Some graduate work	6	2	6	6	6	3	6	7	3
Master's degree	8	15	8	10	10	13	10	9	9
Doctorate	3	4	2	3	2	3	3	2	3
Other degree	0	0	0	0	0	0	0	1	0

s3_gend As part of the survey, I am required to ask: are you male or female?

%	Female	Male
10 web	49.0	51.0
10 phone	55.7	44.3
09 web	52.6	47.4
08 web	53.0	47.0
07 web	48.8	51.2
07 phone	57.4	42.6
06 web	51.8	48.2
05 web	46.2	53.8
05 phone	58.6	41.4
03 phone	54.8	45.2
01 phone	55.2	44.8
99 phone	55.6	44.4
97 phone	54.6	45.4
95 phone	54.5	45.5
93 phone	50.8	49.2

The next several questions are about today's security conditions.

s4_intnow Considering international security as a whole, using a scale from zero to ten, where zero means *not at all secure* and ten means *completely secure*, how do you rate *international* security today?

	Not at All Secure										Completely Secure	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	4	3	7	13	12	20	15	14	6	2	2	4.87
10 phone	4	3	5	11	13	24	13	14	9	1	2	5.00
09 web	4	2	7	13	11	18	17	16	6	2	3	5.02
08 web	4	2	7	12	13	22	17	13	7	1	2	4.87
07 web	3	2	8	13	12	21	17	15	6	1	1	4.92
07 phone	4	2	4	9	11	28	15	15	9	2	2	5.19
06 web	4	2	8	14	15	21	16	15	4	1	1	4.68
05 web	5	3	8	13	13	23	13	13	6	1	1	4.64
05 phone	4	1	4	8	10	26	15	18	11	2	2	5.37

[10 web vs. 09 web: $p = .1262$] [10 web vs. 10 phone: $p = .2506$]

s5_USnow Using the scale from zero to ten, where zero means *not at all secure* and ten means *completely secure*, how do you rate the security of the *United States* today?

	Not at All Secure										Completely Secure	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	5	3	4	9	10	17	15	19	13	4	2	5.40
10 phone	6	3	5	8	8	18	12	17	16	4	2	5.44
09 web	3	2	4	8	9	16	15	20	14	6	3	5.72
08 web	3	2	6	9	10	17	17	18	13	4	2	5.46
07 web	4	2	5	10	11	18	16	18	12	4	1	5.37
07phone	4	2	4	7	8	19	13	20	15	5	3	5.70
06 web	3	4	6	11	12	18	17	16	10	3	0	5.07
05 web	4	3	5	10	11	18	15	17	12	3	1	5.21
05 phone	4	1	2	7	7	19	13	21	18	5	4	5.95

[10 web vs. 09 web: $p = .0016$] [10 web vs. 10 phone: $p = .7425$]

s6_big Which of the following would you say poses the single, biggest threat to security in the United States today? Is it:

Cause (%)	Web 10	Web 09	Web 08	Web 07	Phone 07	Web 06	Web 05	Phone 05
1. Poverty and economic inequality	14	20	19	9	12	10	10	15
2. Threats to the environment	4	3	4	3	5	2	2	5
3. Religious and political extremism	14	12	13	15	15	15	24	17
4. War between nations	4	11	8	8	8	7	6	5
5. Acts of terrorism	36	28	29	34	29	37	36	34
6. Crime and corruption	9	12	9	9	11	9	14	15
7. Illegal immigration	14	11	12	19	15	16	NA	NA
8. Something else	4	4	5	3	6	4	8	9

The following questions ask you to assess the risk of the US being involved in a nuclear war with different countries in the next ten years. Please consider both the likelihood and potential consequences of such conflicts when evaluating the level of risk on a scale from zero to ten, where zero means *no risk* and ten means *extreme risk*.

s7_China How do you rate the risk of the US being involved in a nuclear war with China in the next ten years?

	No Risk										Extreme Risk	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	8	8	12	13	11	21	8	8	5	3	4	4.28
09 web	8	6	13	13	8	18	11	9	7	2	5	4.46
08 web	8	7	13	13	10	18	10	10	6	1	4	4.31
07 web	4	9	12	14	10	18	9	10	6	2	5	4.46
07 phone	4	8	12	12	9	14	8	8	6	2	6	4.09
06 web	7	8	15	12	9	16	11	10	5	2	4	4.32
05 web	5	9	15	14	8	17	11	11	5	2	4	4.32
05 phone	13	8	12	13	11	14	7	7	7	1	6	4.09

[10 web vs. 09 web: $p = .1056$]

s8_Rus How do you rate the risk of the US being involved in a nuclear war with Russia in the next ten years?

	No Risk										Extreme Risk	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	13	11	15	14	10	17	7	5	3	1	4	3.57
09 web	12	11	16	14	10	17	6	7	3	1	3	3.55
08 web	12	15	16	14	10	15	6	4	3	1	3	3.36
07 web	11	16	17	15	11	14	6	3	2	1	3	3.21
07 phone	24	13	15	13	7	11	4	4	3	1	4	2.98
06 web	14	17	18	16	9	13	6	3	2	1	2	3.02
05 web	16	19	18	15	11	11	4	3	2	0	2	2.76
05 phone	24	14	16	12	9	9	4	3	3	0	5	2.84

[10 web vs. 09 web: $p = .9038$]

Now consider that several countries are currently known to possess nuclear weapons.

s9_nprolif Using the scale from zero to ten, where zero means *no risk* and ten means *extreme risk*, how do you rate the risk that nuclear weapons will spread to other countries within the next ten years?

	No Risk										Extreme Risk	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	1	0	2	4	4	13	13	16	18	10	19	7.08
10 phone	2	1	3	3	5	14	6	12	18	10	26	7.20
09 web	1	1	2	3	5	11	11	17	17	8	23	7.21
08 web	1	1	2	3	3	13	11	18	20	9	20	7.22
07web	0	1	1	3	5	11	11	17	17	11	24	7.39
07 phone	1	1	3	3	3	11	9	13	20	8	28	7.40
06 web	0	1	1	2	4	10	10	16	18	13	24	7.56
05 web	0	0	1	4	2	10	10	16	18	12	26	7.61
05 phone	1	1	2	4	5	13	9	13	17	10	25	7.21

[10 web vs. 09 web: $p = .1839$] [10 web vs. 10 phone: $p = .3149$]

s9a_prolifrsk Using the same scale from zero to ten where zero means *no risk* and ten means *extreme risk*, how do you rate the risk to the U.S. in the next ten years if more countries *do* acquire nuclear weapons?

	No Risk										Extreme Risk	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	1	1	2	3	6	14	15	19	15	8	15	6.76

s10_NKrsk Now consider the case of North Korea. For this question, assume that North Korea possesses nuclear weapons. On the scale from zero to ten, where zero means *no risk* and ten means *extreme risk*, how do you rate the risk of the US being involved in a nuclear war with North Korea within the next ten years?

	No Risk										Extreme Risk	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	3	3	5	7	9	19	14	16	9	7	9	5.83
09 web	2	2	4	6	6	18	13	15	14	6	15	6.37
08 web	3	3	7	9	8	17	14	16	11	5	8	5.66
07 web	2	2	6	9	8	17	14	15	11	6	9	5.89
07 phone	7	3	7	8	8	17	11	12	14	4	8	5.40
06 web	2	3	6	9	9	20	16	15	9	5	6	5.54
05 web	2	3	6	8	9	14	13	16	13	8	9	5.99
05 phone	7	4	7	10	9	17	9	12	12	6	8	5.37

[10 web vs. 09 web: $p < .0001$]

s11_NKprolif Again, assuming that North Korea possesses nuclear weapons and using the scale from zero to ten, where zero means *no risk* and ten means *extreme risk*, how do you rate the risk of North Korea providing nuclear weapons or nuclear materials to terrorists?

	No Risk										Extreme Risk	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	2	1	3	3	6	15	11	18	15	10	17	6.83
09 web	1	1	3	3	5	12	11	13	16	11	24	7.20
08 web	1	1	3	5	6	13	12	16	16	9	18	6.84
07 web	1	1	2	4	6	13	10	18	17	10	17	6.92
07 phone	3	2	4	6	5	11	10	14	17	9	20	6.73
06 web	1	1	3	4	6	16	14	17	15	9	14	6.68
05 web	1	1	3	4	4	13	12	16	17	11	19	7.04
05 phone	2	1	4	5	6	14	9	14	17	10	17	6.69

[10 web vs. 09 web: $p < .0001$]

s12_NKUN On a scale from one to seven, where one means *strongly oppose* and seven means *strongly support*, how would you feel about using US military forces, as part of a United Nations military coalition, to compel North Korea to abandon its nuclear weapons program if diplomacy and economic sanctions fail to achieve this goal?

	Strongly Oppose						Strongly Support	
%	1	2	3	4	5	6	7	Mean
10 web	5	5	8	23	22	14	23	4.85
09 web	4	4	7	18	20	15	32	5.19
08 web	6	7	10	20	21	14	22	4.71
07 web	9	8	11	23	19	12	19	4.49
07 phone	19	7	9	11	18	10	26	4.37
06 web	9	9	11	22	21	11	17	4.39

[10 web vs. 09 web: $p < .0001$]

s13_NKUS Again on a scale from one to seven, where one means *strongly oppose* and seven means *strongly support*, how would you feel about using US military forces, acting alone if necessary, to compel North Korea to abandon its nuclear weapons program if diplomatic efforts fail and the United Nations declines to take such action?

	Strongly Oppose						Strongly Support	
%	1	2	3	4	5	6	7	Mean
10 web	14	10	12	23	17	10	14	4.05
09 web	11	10	11	21	19	10	19	4.30
08 web	21	12	13	18	14	8	14	3.72
07 web	21	14	13	19	14	7	12	3.59
07 phone	34	12	9	9	12	6	17	3.39
06 web	24	15	13	18	13	6	10	3.42

[10 web vs. 09 web: $p = .0003$]

s14_IRrsk For this question, assume that Iran possesses nuclear weapons. On the scale from zero to ten, where zero means *no risk* and ten means *extreme risk*, how do you rate the risk of the US being involved in a nuclear war with Iran within the next ten years?

	No Risk										Extreme Risk	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	3	3	4	6	8	16	11	14	14	7	14	6.24
09 web	3	2	5	7	7	16	15	13	13	6	14	6.16
08 web	2	3	4	6	8	16	10	15	13	9	15	6.31
07 web	2	2	6	7	7	16	14	13	14	8	11	6.14
07 phone	7	5	6	8	8	13	10	14	11	5	14	5.64
06 web	1	3	4	8	8	13	13	16	13	8	13	6.27
05 web	3	5	8	9	9	16	14	14	10	5	8	5.46
05 phone	9	5	9	11	11	15	10	11	8	3	9	4.88

[10 web vs. 09 web: $p = .4187$]

s15_IRprolif Again, assuming that Iran possess nuclear weapons and using the scale from zero to ten, where zero means *no risk* and ten means *extreme risk*, how do you rate the risk of Iran providing nuclear weapons or nuclear materials to terrorists?

	No Risk										Extreme Risk	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	2	1	2	3	4	10	9	12	16	13	29	7.55
09 web	1	1	2	3	3	11	9	13	15	12	29	7.48
08 web	1	1	1	3	4	10	9	12	14	13	33	7.67
07 web	1	1	1	3	4	10	10	13	15	12	30	7.59
07 phone	2	2	2	3	4	8	9	12	16	10	32	7.48
06 web	1	1	2	3	4	8	9	12	17	15	29	7.66
05 web	1	1	2	4	4	10	10	16	17	12	23	7.25
05 phone	2	1	2	5	6	11	9	16	16	9	23	6.99

[10 web vs. 09 web: $p = .4278$]

s16_IRUN On a scale from one to seven, where one means *strongly oppose* and seven means *strongly support*, how would you feel about using US military forces, as part of a United Nations military coalition, to compel Iran to abandon its nuclear weapons program if diplomacy and economic sanctions fail to achieve this goal?

	Strongly Oppose						Strongly Support	
%	1	2	3	4	5	6	7	Mean
10 web	5	5	7	18	20	17	28	5.06
09 web	4	4	6	18	21	17	30	5.18
08 web	6	6	9	19	19	14	26	4.87
07 web	8	7	10	20	20	13	22	4.67
07 phone	17	7	8	9	15	14	31	4.62
06 web	8	6	10	18	21	15	22	4.71

[10 web vs. 09 web: $p = .0401$]

s17_IRUS Again on a scale from one to seven, where one means *strongly oppose* and seven means *strongly support*, how would you feel about using US military forces, acting alone if necessary, to compel Iran to abandon its nuclear weapons program if diplomatic efforts fail and the United Nations declines to take such action?

	Strongly Oppose						Strongly Support	
%	1	2	3	4	5	6	7	Mean
10 web	12	9	10	20	17	12	19	4.33
09 web	11	10	10	18	15	14	21	4.44
08 web	19	11	11	18	14	9	18	3.97
07 web	20	12	13	18	14	9	14	3.77
07 phone	32	11	9	7	12	9	20	3.62
06 web	22	14	11	16	14	9	14	3.70

[10 web vs. 09 web: $p = .1181$]

s18_detnuc Now, using a scale from zero to ten, where zero means *not at all important* and ten means *extremely important*, how important do you believe US nuclear weapons are for preventing other countries from using nuclear weapons against us today?

	Not At All Important										Extremely Important	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	2	1	3	3	5	15	9	14	13	8	27	7.09
10 phone	3	2	3	3	3	10	6	9	12	10	38	7.49
09 web	3	1	2	3	5	13	10	11	13	8	31	7.33
08 web	1	1	2	4	4	15	10	11	14	8	29	7.28
07 web	2	1	2	4	5	14	9	12	13	10	27	7.12
07 phone	4	2	4	4	3	12	6	10	13	7	36	7.22
06 web	3	1	2	5	5	11	9	13	14	9	28	7.13
05 web	3	1	3	4	5	11	7	10	14	10	33	7.28
05 phone	5	3	3	4	4	12	6	10	13	7	34	7.03
03 phone	2	1	3	3	3	10	8	11	18	9	31	7.47
01 phone	2	1	2	2	5	8	8	12	16	11	33	7.62
99 phone	1	1	2	3	4	10	7	12	19	11	31	7.66
97 phone	2	1	2	3	4	11	9	11	18	11	29	7.41
95 phone	2	1	2	3	3	10	8	13	16	8	34	7.60

[10 web vs. 09 web: $p = .0110$] [10 web vs. 10 phone: $p = .0024$]

s19_detprolif On the same scale from zero to ten, how important are US nuclear weapons for preventing other countries from providing nuclear weapons or nuclear materials to terrorists today?

	Not At All Important										Extremely Important	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	5	2	4	6	7	19	10	11	11	6	19	6.20
10 phone	8	2	5	4	6	10	9	9	12	6	29	6.55
09 web	6	2	4	7	7	16	8	12	11	5	21	6.24
08 web	5	2	5	7	6	17	10	12	10	6	20	6.19
07 web	6	3	4	8	6	16	10	12	12	7	16	5.97
07 phone	7	5	7	7	4	14	7	10	12	4	22	5.97
06 web	8	4	6	7	7	14	12	12	10	5	16	5.72
05 web	7	4	6	6	6	14	9	12	11	6	20	6.03
05 phone	7	6	5	7	6	14	6	11	12	5	22	6.04

[10 web vs. 09 web: $p = .7448$] [10 web vs. 10 phone: $p = .0191$]

s20_detcb How important are US nuclear weapons for preventing other countries from using chemical or biological weapons against us today?

	Not At All Important										Extremely Important	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	4	2	3	5	5	15	10	13	12	8	22	6.63
09 web	5	2	3	4	6	13	10	12	11	8	27	6.74
08 web	4	2	3	6	5	15	9	12	12	8	25	6.69
07 web	5	3	5	6	6	14	10	14	13	8	17	6.22
07 phone	6	5	6	6	5	13	7	11	13	5	24	6.20
06 web	6	3	5	7	6	13	10	13	11	7	18	6.13
05 web	7	3	6	7	7	12	8	12	11	7	20	6.07
05 phone	7	5	5	6	6	12	6	11	13	6	24	6.20
03 phone	7	4	6	7	6	12	8	10	14	6	21	6.08
01 phone	8	4	7	8	5	11	6	11	12	6	22	6.03
99 phone	5	2	5	6	5	11	9	11	15	9	22	6.57

[10 web vs. 09 web: $p = .2563$]

So far we have been asking you about deterring actions by other countries. Now we want you to consider the importance of US nuclear weapons for deterring terrorist groups that may have members from several different countries and may operate from multiple locations.

s21_ternuc Using the same scale from zero to ten, where zero means *not at all important* and ten means *extremely important*, how important are US nuclear weapons for preventing terrorist groups from using nuclear weapons against us today?

	Not At All Important										Extremely Important	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	7	4	6	7	6	15	9	11	9	6	20	5.93
10 phone	11	3	6	6	4	11	4	9	12	7	28	6.27
09 web	7	2	5	6	5	13	9	10	11	7	24	6.34
08 web	9	4	5	7	6	13	9	8	10	7	22	5.98

[10 web vs. 09 web: $p = .0002$] [10 web vs. 10 phone: $p = .0355$]

s22_terbio Again, on the same scale from zero to ten, how important are US nuclear weapons for preventing terrorist groups from using chemical or biological weapons against us today?

	Not At All Important										Extremely Important	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	9	4	6	7	7	14	9	10	9	6	19	5.73
09 web	8	3	5	6	6	13	9	10	11	8	22	6.16
08 web	10	5	6	7	5	13	8	10	9	7	20	5.77

[10 web vs. 09 web: $p = .0002$]

s23_USstat How important are nuclear weapons for maintaining US influence and status as a world leader?

%	Not At All Important 0	1	2	3	4	5	6	7	8	9	Extremely Important 10	Mean
10 web	4	2	3	3	5	15	9	13	14	8	23	6.78
10 phone	4	1	3	2	6	10	5	10	17	10	32	7.30
09 web	3	2	2	4	4	13	10	10	14	9	29	7.14
08 web	3	1	3	4	5	13	11	13	13	8	25	6.90
07 web	4	2	3	5	4	13	11	12	14	10	22	6.78
07 phone	5	3	4	5	5	14	7	11	13	7	27	6.71
06 web	4	2	3	4	4	12	10	12	15	8	25	6.88
05 web	5	2	4	5	4	12	7	12	15	10	24	6.76
05 phone	5	4	3	5	5	13	7	11	14	6	28	6.71

[10 web vs. 09 web: $p = .0003$] [10 web vs. 10 phone: $p = .0002$]

s24_USsup How important are nuclear weapons for maintaining US military superiority?

%	Not At All Important 0	1	2	3	4	5	6	7	8	9	Extremely Important 10	Mean
10 web	4	1	3	3	4	14	9	12	12	10	28	7.10
10 phone	3	1	2	2	4	8	5	10	14	11	39	7.72
09 web	3	1	2	4	3	12	9	12	13	10	31	7.32
08 web	3	1	3	4	4	11	10	13	13	9	30	7.22
07 web	3	2	3	3	4	13	10	12	14	11	25	7.07
07 phone	4	2	4	4	4	11	6	10	14	8	32	7.07
06 web	4	1	2	4	4	11	9	12	14	11	27	7.13
05 web	4	2	3	4	3	10	8	12	15	10	29	7.11
05 phone	4	3	3	4	3	11	7	13	14	7	31	7.05

[10 web vs. 09 web: $p = .0194$] [10 web vs. 10 phone: $p < .0001$]

Now, using a scale from one to seven where one means you *strongly disagree* and seven means you *strongly agree*, please respond to the following two statements.

s25_feas It is *feasible* to eliminate all nuclear weapons worldwide within the next 25 years.

%	Strongly Disagree 1	2	3	4	5	6	Strongly Agree 7	Mean
10 web	25	16	14	17	11	7	10	3.33
10 phone	39	12	9	6	10	5	19	3.26
09 web	24	16	12	17	13	6	12	3.45
08 web	26	16	14	16	11	6	10	3.28
07 web	25	16	15	15	11	7	11	3.36
07 phone	37	10	9	7	10	5	23	3.48
06 web	26	16	14	13	12	7	12	3.36
05 web	30	15	12	13	11	7	13	3.31
05 phone	36	11	8	5	10	4	25	3.56
03 phone	35	10	9	7	9	7	24	3.62
01 phone	37	10	9	7	10	6	22	3.48
99 phone	33	10	9	8	12	5	23	3.64
97 phone	31	11	9	6	11	6	26	3.76
95 phone	26	9	10	9	13	8	24	3.95
93 phone	29	14	8	6	11	7	25	3.78

[10 web vs. 09 web: $p = .0881$] [10 web vs. 10 phone: $p = .5374$]

s26_desire It is *desirable* to eliminate all nuclear weapons worldwide within the next 25 years.

	Strongly Disagree						Strongly Agree	
%	1	2	3	4	5	6	7	Mean
10 web	7	4	6	14	13	17	40	5.32
10 phone	16	4	6	5	8	8	53	5.21
09 web	7	3	4	12	14	17	43	5.46
08 web	6	4	4	13	13	16	45	5.51
07 web	5	3	5	12	14	16	45	5.54
07 phone	13	4	3	3	7	8	61	5.60
06 web	5	4	5	9	12	17	49	5.63
05 web	5	4	4	9	11	13	55	5.75
05 phone	10	3	4	3	7	8	65	5.76

[10 web vs. 09 web: $p = .0312$] [10 web vs. 10 phone: $p = .2839$]

s27_retain Using a scale from zero to ten, where zero means *not at all important* and ten means *extremely important*, how important is it for the US to retain nuclear weapons today?

	Not at All Important										Extremely Important	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	3	1	2	3	3	13	9	14	12	10	31	7.37
10 phone	3	2	2	3	3	8	3	12	12	7	44	7.77
09 web	2	1	2	2	3	13	9	11	13	9	35	7.55
08 web	2	1	2	3	4	12	8	12	12	9	35	7.51
07 web	2	1	1	4	5	11	8	12	14	10	31	7.41
07 phone	3	3	3	3	2	12	6	14	10	5	39	7.38
06 web	3	1	2	3	4	11	8	12	14	9	33	7.45
05 web	3	1	2	3	3	10	8	11	12	10	38	7.56
05 phone	4	2	2	3	3	11	7	12	13	6	37	7.33
03 phone	3	2	2	3	3	11	9	15	14	7	32	7.30
01 phone	1	1	1	2	3	10	7	17	12	6	39	7.75
99 phone	2	2	1	3	3	9	9	14	15	7	34	7.50
97 phone	3	1	2	3	4	14	7	18	13	5	30	7.19
95 phone	7	0	6	10	0	11	0	18	12	0	36	6.78
93 phone	6	6	0	11	0	14	20	0	13	0	30	6.59

[10 web vs. 09 web: $p = .0602$] [10 web vs. 10 phone: $p = .0028$]

s28_CTBT Using a scale from one to seven, where one means *strongly oppose* and seven means *strongly support*, how do you feel about the US participating in a treaty that bans all nuclear test explosions?

	Strongly Oppose						Strongly Support	
%	1	2	3	4	5	6	7	Mean
10 web	5	3	6	19	18	16	33	5.22
10 phone	16	3	4	6	12	12	48	5.20
09 web	4	2	5	17	16	15	40	5.44
08 web	4	3	6	15	18	16	39	5.44
07 web	3	2	4	16	18	20	37	5.55
07 phone	8	3	3	3	11	11	61	5.84
03 phone	12	5	8	7	11	12	44	5.14
01 phone	12	6	9	8	12	12	41	4.99
99 phone	13	3	5	6	11	13	49	5.34
97 phone	12	4	5	7	10	11	52	5.39
95 phone*	6	5	3	15	13	11	46	5.43

[10 web vs. 09 web: $p = .0003$] [10 web vs. 10 phone: $p = .8310$]

s29_FMC On the same scale from one to seven, where one means *strongly oppose* and seven means *strongly support*, how do you feel about the US participating in a treaty that bans production of nuclear materials that could be used to make nuclear weapons?

	Strongly Oppose						Strongly Support	
%	1	2	3	4	5	6	7	Mean
10 web	5	3	7	20	20	16	30	5.12
03 phone	11	5	7	8	13	11	44	5.17
01 phone	13	6	7	11	15	12	36	4.90
99 phone	11	5	6	8	12	13	46	5.28
97 phone	12	4	7	8	11	11	46	5.18
95 phone	6	6	4	16	16	10	43	5.30

s30_disarm Again, using the same scale from one to seven, how do you feel about the US agreeing to a provision that requires us to eventually eliminate all of our nuclear weapons?

	Strongly Oppose						Strongly Support	
%	1	2	3	4	5	6	7	Mean
10 web	15	7	11	20	16	11	21	4.33
03 phone	27	8	7	8	11	8	31	4.16
01 phone	29	10	10	8	10	6	26	3.86
99 phone	25	8	7	8	10	9	32	4.27
97 phone	23	8	9	7	10	8	35	4.40
95 phone	12	12	7	18	12	7	32	4.62

Currently, the United States and Russia have more nuclear weapons than any other countries. The US and Russia have agreed to reduce their numbers of ready-to-use, long-range nuclear weapons to 1,550 each.

[arguments randomized]

Some people argue that since the end of the Cold War, US nuclear weapons have become much less important for our security and that of our allies. They argue that the US needs only a few hundred strategic nuclear weapons to prevent other countries or terrorist groups from using nuclear weapons against us or our key allies that do not have nuclear weapons such as Germany, Japan, and South Korea. They think money spent on maintaining a large US nuclear arsenal should be substantially reduced.

Some people argue that because nuclear weapons have spread to other countries such as India, Pakistan, and possibly North Korea, and because Iran and some terrorist groups may be seeking nuclear weapons, it would be unwise for the US to reduce below 1,550 ready-to-use, long-range nuclear weapons currently agreed to with Russia. They think money spent on the US nuclear arsenal must be sustained to prevent others from using nuclear weapons against us, and to reduce the need for our key allies to develop nuclear weapons of their own.

s31_arsenal Assuming zero is the minimum number and 1,550 is the maximum number, how many ready-to-use, long-range nuclear weapons do you think the United States needs to prevent other countries or terrorist groups from using nuclear weapons against us and our key allies? (verbatim)

	Mean	Median
10 web	1,047	1,300
10 phone	1,025	1,500

[10 web vs. 10 phone: $p = .4838$]

s31a_ratify The new arms control treaty recently signed by the Presidents of the U.S. and Russia that agrees to reduce each country's number of ready-to-use, long-range nuclear weapons to 1,550 does not go into effect until it is ratified by the U.S. Senate and Russia's legislature. How do you want your senator to vote?

	YES: Ratify Treaty	NO: Reject Treaty
%	1	2
10 web	76	24

Please respond to the following statements on a scale from one to seven where one means you *strongly disagree* and seven means you *strongly agree*. [s32–s36 Randomized]

s32_warhds1 The United States should decrease the numbers of ready-to-use, long-range nuclear weapons below the planned minimum level of 1,550 if Russia agrees to similar reductions that are verifiable.

	Strongly Disagree						Strongly Agree	
%	1	2	3	4	5	6	7	Mean
10 web	19	7	8	20	14	13	19	4.15
09 web	19	8	8	21	15	13	16	4.07
08 web	18	9	9	19	15	12	18	4.09

[10 web vs. 09 web: $p = .2579$]

s33_warhds2 The United States should continue to reduce the numbers of ready-to-use, long-range nuclear weapons below 1,550, even if Russia does not.

	Strongly Disagree						Strongly Agree	
%	1	2	3	4	5	6	7	Mean
10 web	38	13	10	17	8	5	8	2.91
09 web	34	13	10	18	11	7	8	3.11
08 web	35	13	12	17	9	7	8	3.05

[10 web vs. 09 web: $p = .0053$]

s34_warhds3 The United States should not reduce the size of its nuclear stockpile below the level of any other country.

	Strongly Disagree						Strongly Agree	
%	1	2	3	4	5	6	7	Mean
10 web	9	4	7	16	12	13	40	5.13
09 web	9	6	6	15	11	13	39	5.10
08 web	8	7	8	14	12	13	39	5.13

[10 web vs. 09 web: $p = .6348$]

s35_warhds4 Having large numbers of US nuclear weapons is no longer necessary. As long as we have a few dozen nuclear weapons, we can prevent others from using nuclear weapons against us and our key allies.

	Strongly Disagree						Strongly Agree	
%	1	2	3	4	5	6	7	Mean
10 web	24	13	12	20	13	9	10	3.51
09 web	27	13	12	20	12	8	8	3.33
08 web	26	14	12	18	13	7	9	3.36

[10 web vs. 09 web: $p = .0127$]

s36_warhds5 Regardless of what others do, the US should eliminate all its nuclear weapons as soon as possible. This would put the US in a position of moral leadership by setting an example for others; it would bring the US into compliance with a key objective of the Nuclear Nonproliferation Treaty; and it would make the world safer.

	Strongly Disagree						Strongly Agree	
%	1	2	3	4	5	6	7	Mean
10 web	43	13	9	16	7	4	7	2.72
09 web	43	12	9	16	8	5	6	2.74
08 web	44	14	9	14	9	4	6	2.65

[10 web vs. 09 web: $p = .7723$]

Nuclear weapons have thousands of components that must be maintained in perfect working order. There can be several reasons for making changes to existing nuclear weapons. Some changes may be designed to improve safety, reliability, or security. Other modifications may be to change the way the weapons can be employed, such as to allow the warhead to penetrate below ground before exploding. Another reason is to modify the effects the warhead produces when detonated, such as increasing or decreasing the blast or radiation effects. Such a wide variety of changes make it difficult to define when modifications to an existing nuclear weapon make it a "new" nuclear weapon. That distinction can be important to policy debates.

Please give your judgment about each of the following types of modifications to existing nuclear weapons using a scale from one to seven, where one means the proposed changes definitely do *not* constitute a "new" nuclear weapon and seven means the proposed changes definitely *do* constitute a "new" nuclear weapon. [s37–s41 Randomized]

s37_new1 Certain components are changed to improve the *safety* of an existing nuclear weapon, but do not change the weapon's effects when used.

	Definitely NOT a New Nuclear Weapon						Definitely IS a New Nuclear weapon	
%	1	2	3	4	5	6	7	Mean
10 web	26	10	8	24	11	8	13	3.62
09 web	24	9	9	23	13	10	13	3.71
08 web	27	9	9	23	12	9	11	3.53

[10 web vs. 09 web: $p = .2489$]

s38_new2 Certain components are changed to improve the *reliability* of an existing nuclear weapon, but do not change the weapon's effects when used.

	Definitely NOT a New Nuclear Weapon						Definitely IS a New Nuclear weapon	
%	1	2	3	4	5	6	7	Mean
10 web	24	11	8	26	11	8	12	3.60
09 web	22	9	10	26	14	8	11	3.68
08 web	25	10	11	24	13	8	8	3.47

[10 web vs. 09 web: $p = .2796$]

s39_new3 Certain components are changed to make the weapon more difficult to be acquired and used by terrorists.

	Definitely NOT a New Nuclear Weapon						Definitely IS a New Nuclear weapon	
%	1	2	3	4	5	6	7	Mean
10 web	24	6	8	24	11	10	17	3.90
09 web	21	6	7	20	14	12	19	4.13
08 web	22	8	8	21	14	11	17	3.99

[10 web vs. 09 web: $p = .0031$]

s40_new4 Certain components are changed to increase or decrease the blast or radiation effects of an existing nuclear weapon.

	Definitely NOT a New Nuclear Weapon						Definitely IS a New Nuclear weapon	
%	1	2	3	4	5	6	7	Mean
10 web	14	6	8	27	16	11	18	4.31
09 web	11	6	8	25	18	14	19	4.49
08 web	12	6	10	23	19	13	17	4.39

[10 web vs. 09 web: $p = .0098$]

s41_new5 Certain components are changed to allow an existing nuclear weapon to penetrate below ground before exploding.

	Definitely NOT a New Nuclear Weapon						Definitely IS a New Nuclear weapon	
%	1	2	3	4	5	6	7	Mean
10 web	14	6	8	26	16	12	18	4.30
09 web	11	5	8	26	18	13	18	4.45
08 web	12	6	10	24	17	14	16	4.36

[10 web vs. 09 web: $p = .0279$]

The next series presents pairs of contrasting statements, and we want to know which statement you agree with the most. It is OK if you do not completely agree with either statement. We just need to know which statement you agree with the *most.*

[s42–s47 random order; statements within each pair randomly ordered]

s42_sec These statements contrast views about world security today.

	Web 2010	Phone 2001	Phone 1999
Today the world is a *less* dangerous place for the US than it was during the Cold War.	23	24	36
Today the world is a *more* dangerous place for the US than it was during the Cold War.	77	76	64

s43_rsk_ben These statements contrast views about risks and benefits of the US nuclear arsenal.

	Web 2010	Phone 2001	Phone 1999
The US nuclear arsenal deters attacks and ensures our security, and these *benefits* far outweigh any *risks* from US nuclear weapons.	73	79	73
The US nuclear arsenal threatens civilization and cannot be safely managed, and these *risks* far outweigh any *benefits* from US nuclear weapons.	27	21	27

s44_use These statements contrast views about the uses of US nuclear weapons.

	Web 2010	Phone 2001	Phone 1999
US nuclear weapons have no use except for deterring others from using their nuclear weapons against us.	37	40	42
US nuclear weapons are useful both for deterring others from using their nuclear weapons against us and for winning wars if necessary.	63	60	58

s45_det These statements contrast views about deterring terrorist groups.

	Web 2010
US nuclear weapons have very little if any utility for preventing non-state terrorist groups from using weapons of mass destruction against us because such groups have little of value for us to attack with our nuclear weapons.	49
US nuclear weapons have great utility for preventing non-state terrorist groups from using weapons of mass destruction against us because our nuclear weapons deter other countries from providing weapons of mass destruction to terrorists.	51

s46_abolish These statements contrast views about the possibility of a world free of nuclear weapons.

	Web 2010
It is possible to abolish all nuclear weapons worldwide if the US carefully negotiates with other countries to gradually reduce the numbers of nuclear weapons to zero.	20
While gradual reductions in the numbers of nuclear weapons may be beneficial, it will not be possible to convince all countries to abolish all nuclear weapons.	80

s47_safewrld These statements contrast views about the effects of a world free of nuclear weapons.

	Web 2010
A world without nuclear weapons would be safer than today because the destructive power of nuclear weapons would no longer be a threat.	54
A world without nuclear weapons would be more dangerous than today because countries could again conduct large-scale wars like World Wars I and II to settle disputes.	46

The next set of questions concerns your views about investment priorities. Please indicate how you think government spending should change for each of the following using a scale from one to seven, where one means spending should *substantially decrease* and seven means spending should *substantially increase*. [s48–s52 randomized]

s48_spend1 How should government spending change for developing and testing new nuclear weapons?

	Substantially Decrease						Substantially Increase	
%	1	2	3	4	5	6	7	Mean
10 web	11	12	19	31	14	6	8	3.75
09 web	8	8	15	32	19	10	9	4.11
08 web	9	10	17	30	17	7	9	3.97
07 web	10	9	15	36	18	6	5	3.83
07 phone	18	11	15	16	20	6	14	3.81
06 web	8	9	14	33	22	8	7	4.06
05 web	11	9	16	31	19	7	7	3.86
05 phone	24	13	15	15	16	6	11	3.45
03 phone	19	13	21	19	16	6	7	3.42
01 phone	13	13	19	19	19	6	11	3.79
99 phone	18	14	19	19	18	5	7	3.45
97 phone	25	16	20	15	13	3	7	3.13
95 phone	44	14	14	10	9	2	7	2.61
93 phone	40	16	12	9	11	3	8	2.77

[10 web vs. 09 web: $p < .0001$]

s48a_spend2 How should government spending change for preventing weapons of mass destruction from entering through US ports?

	Substantially Decrease						Substantially Increase	
%	1	2	3	4	5	6	7	Mean
10 web	2	2	5	21	21	20	29	5.34
09 web	3	2	5	19	21	19	31	5.34
08 web	2	2	6	20	17	18	34	5.41
07 web	1	2	4	20	20	21	32	5.47
07 phone	5	2	5	7	13	15	54	5.83
06 web	1	1	3	16	20	27	33	5.65
05 web	2	2	3	16	20	23	35	5.60
05 phone	5	2	5	8	14	17	50	5.73

[10 web vs. 09 web: $p = .9321$]

s49_spend3 How should government spending change for maintaining the ability to develop and improve US nuclear weapons in the future?

	Substantially Decrease						Substantially Increase	
%	1	2	3	4	5	6	7	Mean
10 web	7	8	14	37	18	7	9	4.08
10 phone	16	7	13	14	20	7	23	4.27
09 web	6	6	11	33	21	11	11	4.33
08 web	6	9	14	31	20	8	11	4.18
07 web	6	8	12	37	20	9	8	4.16
07 phone	13	9	14	17	22	8	17	4.19
06 web	5	6	12	32	25	11	9	4.33
05 web	8	7	14	33	19	9	10	4.15
05 phone	17	10	17	15	18	8	16	3.94
03 phone	13	8	11	14	19	15	21	4.47
01 phone	7	7	8	10	21	14	32	5.02
99 phone	10	7	9	13	20	13	28	4.78
97 phone	13	9	12	13	19	10	24	4.45
95 phone	23	8	11	12	16	8	22	4.00
93 phone	23	12	16	12	14	8	16	3.68

[10 web vs. 09 web: $p < .0001$] [10 web vs. 10 phone: $p = .0356$]

s50_spend4 How should government spending change for improving US border security?

	Substantially Decrease						Substantially Increase	
%	1	2	3	4	5	6	7	Mean
10 web	2	2	5	19	18	18	35	5.46
09 web	3	3	6	19	20	19	31	5.29
08 web	2	3	7	20	19	16	33	5.31
07 web	1	2	5	18	20	20	34	5.47
07 phone	5	3	7	8	15	13	49	5.58
06 web	1	2	4	16	18	25	33	5.57
05 web	1	1	4	15	18	20	40	5.68
05 phone	4	3	5	9	16	17	47	5.68

[10 web vs. 09 web: $p = .0033$]

s51_spend5 How should government spending change for improving our capabilities for responding to large-scale acts of terrorism in the US?

	Substantially Decrease						Substantially Increase	
%	1	2	3	4	5	6	7	Mean
10 web	2	1	5	25	23	19	26	5.24
09 web	2	3	6	23	22	18	27	5.19
08 web	2	3	7	24	21	18	26	5.20
07 web	2	1	6	21	24	22	24	5.28
07 phone	3	2	6	9	17	16	47	5.70
06 web	1	1	3	18	23	27	27	5.49
05 web	2	2	5	20	24	21	27	5.32
05 phone	4	3	6	12	19	14	41	5.48

[10 web vs. 09 web: $p = .4269$]

s52_spend6 How should government spending change for ensuring the reliability and safety of existing US nuclear weapons?

	Substantially Decrease						Substantially Increase	
%	1	2	3	4	5	6	7	Mean
10 web	2	3	10	35	24	13	13	4.65

The following questions focus more specifically on the issue of terrorism. For each, please consider both the *likelihood* of terrorism and its potential *consequences*. Each is answered on a scale from zero to ten, where zero means *no threat* and ten means *extreme threat.*

s53_ter1 Remembering to consider both the *likelihood* and potential *consequences*, how do you rate the overall threat of terrorism of all types throughout the *world* today?

	No Threat										Extreme Threat	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	1	1	1	1	4	12	10	16	20	11	24	7.55
09 web	1	1	1	2	4	11	9	16	17	11	26	7.47
08 web	0	0	1	2	4	10	10	15	19	12	26	7.61

[10 web vs. 09 web: $p = .2975$]

s54_ter2 Focusing more specifically on our own country, and considering both foreign and domestic sources of terrorism, how do you rate the threat of all kinds of terrorism in the *United States* today?

	No Threat										Extreme Threat	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	1	1	1	3	6	14	14	16	17	10	17	7.03
10 phone	0	1	2	3	3	10	9	16	19	9	29	7.58
09 web	1	1	2	3	7	14	13	17	17	9	16	6.86
08 web	0	1	2	4	7	13	13	16	18	9	17	6.92
07 web	0	0	1	2	4	11	13	21	21	11	15	7.20
07 phone	1	1	2	5	4	14	12	18	20	5	18	6.87
06 web	0	1	1	3	4	9	13	22	20	12	16	7.30
03 phone	1	1	3	4	4	10	10	15	22	8	21	7.20
01 phone	1	0	1	2	1	4	4	11	14	10	51	8.57
97 phone	1	2	4	8	7	17	12	15	13	5	16	6.34

[10 web vs. 09 web: $p = .0441$] [10 web vs. 10 phone: $p < .0001$]

s55_ter3 Narrowing our focus to the threat of *nuclear* terrorism, how do you rate the threat of terrorists creating a nuclear explosion in the United States today?

	No Threat										Extreme Threat	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	2	4	6	9	12	21	12	12	10	4	8	5.47
09 web	2	4	7	8	10	18	13	11	11	6	10	5.75
08 web	2	5	8	9	10	16	12	12	11	5	9	5.54

[10 web vs. 09 web: $p = .0037$]

s56_ter4 So-called "dirty" bombs are devices that use conventional explosives to scatter radioactive materials. How do you rate the threat of terrorists using a dirty bomb in the United States today?

	No Threat										Extreme Threat	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	2	2	4	4	8	17	12	14	14	9	14	6.43
09 web	1	2	4	5	10	15	13	13	14	8	16	6.44
08 web	1	3	5	7	8	15	11	13	14	9	15	6.44

[10 web vs. 09 web: $p = .9211$]

s57_ter5 Biological devices are used to spread biological agents such as germs and viruses. How do you rate the threat of terrorists using a biological device in the United States today?

	No Threat										Extreme Threat	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	1	2	3	4	8	16	12	17	13	9	16	6.62
09 web	1	2	3	5	7	14	11	14	15	9	19	6.81
08 web	1	2	4	5	8	13	12	15	13	11	17	6.72

[10 web vs. 09 web: $p = .0413$]

s58_ter6 Chemical terrorism could result from terrorist attacks on US chemical installations or by terrorists purposely dispensing dangerous chemical agents. How do you rate the threat of chemical terrorism in the United States today?

	No Threat										Extreme Threat	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	1	2	3	4	8	16	13	16	14	9	15	6.58
09 web	1	2	3	5	7	15	12	13	14	11	17	6.71
08 web	1	2	3	6	8	14	11	15	14	11	16	6.65

[10 web vs. 09 web: $p = .1540$]

s59_ter7 How do you rate the threat of suicide bombings by terrorists in the United States today?

	No Threat										Extreme Threat	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	1	2	3	3	7	13	12	12	15	11	21	6.93
09 web	2	3	4	4	7	15	12	13	13	10	17	6.57
08 web	1	3	4	6	8	14	11	13	14	9	18	6.58

[10 web vs. 09 web: $p = .0002$]

s60_ter8 Turning now to the future, how do you rate the overall threat of terrorism to the United States in the next ten years?

	No Threat										Extreme Threat	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	1	1	1	2	5	13	10	13	15	15	24	7.39
10 phone	0	0	2	4	2	7	6	11	17	11	39	8.01
09 web	1	1	3	3	5	14	10	13	14	12	24	7.18
08 web	1	1	2	3	6	12	10	13	15	11	25	7.24

[10 web vs. 09 web: $p = .0129$] [10 web vs. 10 phone: $p < .0001$]

s61_winwot Using a scale from zero to ten, where zero means *not at all confident* and ten means *extremely confident*, how confident are you that we will eventually win the war on terrorism?

	Not At All Confident										Extremely Confident	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	12	4	8	9	8	20	11	12	7	4	6	4.79
10 phone	12	5	8	8	9	24	6	9	7	4	8	4.75
09 web	9	2	7	10	9	18	12	13	9	4	7	5.11
08 web	12	4	9	11	7	17	10	12	8	4	6	4.77
07 web	13	5	9	11	9	14	10	11	8	4	6	4.56
07 phone	10	7	9	9	7	20	9	9	9	3	8	4.78
06 web	13	5	9	11	7	14	10	11	9	4	7	4.70
05 web	15	5	10	9	7	11	9	13	10	5	7	4.71
05 phone	10	9	9	8	7	15	8	12	9	4	10	4.85
03 phone	7	5	7	7	8	17	10	11	11	5	12	5.49

[10 web vs. 09 web: $p = .0017$] [10 web vs. 10 phone: $p = .8094$]

Increasing security for Americans sometimes requires reducing liberties, and finding the right mix of security and liberty is a matter for public debate.

s62_marb1 For this question, assume that *black* marbles represent the level of emphasis placed on the *security* of Americans and *white* marbles represent the level of emphasis placed on *liberties* of Americans. How many of each color would you place in a total combined mix of 100 marbles?

%	Black (Security)	White (Liberties)
10 web	50.2	49.8
10 phone	46.3	53.7
09 web	50.0	50.0
08 web	50.1	49.9
07 web	46.8	53.2
07 phone	47.9	52.0
06 web	46.4	53.6

[10 web vs. 09 web (black): $p = .7271$; (white) $p = .7909$]
[10 web vs. 10 phone (black): $p = .0002$; (white) $p = .0005$]

s63_marb2 Again, using the marbles example where *black* marbles represent the level of emphasis placed on the *security* of Americans, and *white* marbles represent the level of emphasis placed on *liberties* of Americans, how many of each color do you think represents the way the US government is balancing considerations of security and liberties today?

%	Black (Security)	White (Liberties)
10 web	51.4	48.6
10 phone	49.2	50.8
09 web	51.3	48.7
08 web	54.2	45.8
07 web	50.1	49.9
07 phone	54.3	45.7

[10 web vs. 09 web (black): p = .9120; (white) p = .8877]
[10 web vs. 10 phone (black): p = .0421; (white) p = .0522]

Using a scale where one means *strongly oppose* and seven means *strongly support*, how would you feel about the following measures for preventing terrorism in the US?

s64_intrude1 Requiring national identification cards for all US citizens.

	Strongly Oppose						Strongly Support	
%	1	2	3	4	5	6	7	Mean
10 web	10	6	6	18	13	13	34	4.93
09 web	11	4	6	18	13	13	35	4.97
08 web	10	6	7	16	14	12	34	4.92
07 web	9	5	6	16	15	15	33	5.00
07 phone	17	6	5	6	10	10	45	4.97
06 web	10	5	5	14	15	17	34	5.05
05 web	15	6	6	13	13	14	34	4.80
05 phone	19	6	7	6	11	10	41	4.78
03 phone	24	7	5	7	11	11	34	4.46
01 phone	14	7	6	7	13	11	43	5.04
95 phone	27	6	7	8	13	7	32	4.23

[10 web vs. 09 web: p = .5892]

s65_intrude2 Restricting immigration into the US to prevent terrorism.

	Strongly Oppose						Strongly Support	
%	1	2	3	4	5	6	7	Mean
10 web	5	4	6	16	14	16	40	5.37
09 web	5	4	6	14	14	16	41	5.39
08 web	4	4	7	15	13	14	42	5.38
07 web	4	5	6	13	14	16	42	5.43
07 phone	10	6	6	8	13	14	43	5.19
06 web	4	4	8	13	12	17	42	5.43
05 web	6	4	6	12	13	16	43	5.43
05 phone	10	6	9	7	13	14	42	5.18
03 phone	12	6	8	8	13	13	40	5.03
01 phone	8	5	7	8	14	12	45	5.33

[10 web vs. 09 web: p = .7842]

s66_intrude3 Permitting government officials to hold and interrogate suspected terrorists within the US for a period of one year without charging the suspects with a crime.

	Strongly Oppose						Strongly Support	
%	1	2	3	4	5	6	7	Mean
10 web	13	9	11	19	13	13	23	4.38
09 web	14	9	10	19	15	12	21	4.34
08 web	17	9	12	17	13	11	21	4.16
07 web	17	11	11	18	14	11	18	4.08
07 phone	27	10	9	8	13	9	25	3.94
06 web	15	10	10	18	14	12	21	4.28
05 web	21	10	9	15	12	11	22	4.06
05 phone	28	11	9	8	12	8	24	3.83

[10 web vs. 09 web: $p = .5674$]

s67_intrude4 Permitting government officials to monitor the phone conversations of American citizens who are suspected of involvement in terrorism without requiring a warrant from a court of law.

	Strongly Oppose						Strongly Support	
%	1	2	3	4	5	6	7	Mean
10 web	14	9	9	19	13	12	24	4.38
09 web	15	8	9	17	15	13	23	4.40
08 web	16	10	9	16	14	11	24	4.30
07 web	16	8	10	16	13	13	24	4.37
06 web	17	8	8	14	14	14	26	4.48

[10 web vs. 09 web: $p = .7304$]

s68_WOT Now, on a scale from zero to ten, where zero means *not at all effective* and ten means *extremely effective*, how effective, overall, do you believe US efforts in the war on terrorism have been thus far?

	Not At All Effective										Extremely Effective	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	4	3	5	11	13	18	17	15	8	2	3	5.13
09 web	4	3	5	9	11	19	15	16	11	4	4	5.47
08 web	7	4	8	11	11	17	13	14	9	3	3	4.88
07 web	9	5	12	13	11	15	13	12	7	1	2	4.42
07 phone	7	6	7	10	10	18	14	14	9	2	4	4.87
06 web	8	6	9	11	10	14	15	15	8	2	3	4.65
05 web	9	5	9	12	8	15	13	14	9	3	4	4.73
05 phone	5	5	7	9	10	18	13	15	11	2	4	5.05
03 phone	3	3	5	8	9	18	14	18	12	3	6	5.60

[10 web vs. 09 web: $p < .0001$]

Since the terrorist attacks on the US in September 2001, the US government has taken several actions intended to improve homeland security. Using a scale from zero to ten, where zero means *not at all effective* and ten means *extremely effective*, how do you rate the efforts to improve each of the following thus far? [S69–S71 Randomized]

s69_borders1 How effective have efforts been to improve security at US *borders*?

	Not At All Effective										Extremely Effective	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	14	8	11	10	11	15	10	9	5	3	3	4.03
09 web	9	6	10	9	10	18	13	10	8	3	3	4.54
08 web	12	6	12	11	11	17	11	10	6	3	2	4.18
07 web	12	8	11	12	11	17	12	10	5	1	2	4.00
07 phone	7	10	13	14	14	18	9	8	4	1	3	3.98
06 web	16	9	12	13	11	15	11	7	4	1	1	3.53
05 web	15	10	12	12	9	15	11	8	5	2	1	3.71
05 phone	7	10	12	14	12	17	11	8	6	1	3	4.09

[10 web vs. 09 web: $p < .0001$]

s70_borders2 How effective have efforts been to improve security at US *seaports* and *harbors*?

	Not At All Effective										Extremely Effective	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	6	4	8	9	11	20	14	11	9	5	4	5.01
09 web	6	5	7	7	11	20	15	12	10	4	4	5.14
08 web	7	6	8	10	11	19	11	12	9	3	3	4.76
07 web	8	6	9	10	9	19	14	14	7	2	2	4.69
07 phone	7	9	11	12	12	18	11	9	6	1	4	4.34
06 web	9	8	10	11	10	18	14	10	5	2	2	4.22
05 web	10	8	11	11	10	17	12	11	7	2	2	4.27
05 phone	5	9	10	13	11	20	13	11	5	1	3	4.46

[10 web vs. 09 web: $p = .1903$]

s71_borders3 How effective have efforts been to improve security at US airports?

	Not At All Effective										Extremely Effective	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	4	3	5	6	11	16	15	15	12	8	5	5.64
09 web	3	3	3	5	6	15	12	16	18	10	8	6.27
08 web	3	3	6	6	9	15	12	16	15	9	7	5.91
07 web	3	2	5	5	8	14	14	19	16	8	6	6.02
07 phone	2	2	4	8	7	15	15	17	16	6	8	6.02
06 web	3	3	5	7	9	15	14	18	16	7	3	5.72
05 web	5	5	6	8	8	13	15	17	13	6	4	5.46
05 phone	2	4	6	8	9	15	13	18	14	5	7	5.77
03 phone	4	3	6	8	10	22	13	16	10	2	5	5.40

[10 web vs. 09 web: $p < .0001$]

On a scale from zero to ten, where zero means *not at all confident* and ten means *completely confident,* how confident are you that the US can achieve each of the following in the next ten years?

s72_USlarge How confident are you that the US can prevent large-scale terrorist attacks that injure or kill thousands of people from occurring in the US in the next ten years?

	Not At All Confident										Completely Confident	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	7	3	7	9	10	20	14	14	9	3	3	5.01
09 web	6	2	6	7	10	20	15	16	9	4	4	5.26
08 web	7	3	8	10	10	17	13	13	11	4	3	4.99
07 web	9	5	8	12	9	19	13	14	8	2	3	4.71
07 phone	4	4	6	8	10	19	14	15	10	3	6	5.28
06 web	8	5	8	13	9	18	13	13	7	2	3	4.63
05 web	13	4	10	11	9	13	12	14	9	3	3	4.53
05 phone	5	6	5	9	10	18	11	15	12	3	6	5.26

[10 web vs. 09 web: $p = .0063$]

s73_USsmall How confident are you that the US can prevent small-scale terrorist attacks that injure or kill a few people from occurring in the US in the next ten years?

	Not At All Confident										Completely Confident	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	12	5	8	13	10	18	12	9	8	3	3	4.35
09 web	9	4	8	11	11	19	12	11	8	4	4	4.74
08 web	11	7	9	10	12	17	9	9	9	3	4	4.44
07 web	13	6	9	12	9	16	11	11	7	3	3	4.33
07 phone	6	8	10	12	11	18	10	11	6	2	6	4.57
06 web	15	7	10	12	10	14	10	9	7	3	3	4.08
05 web	18	7	10	10	9	14	8	10	8	3	3	4.04
05 phone	10	11	9	12	10	16	8	10	7	3	5	4.27

[10 web vs. 09 web: $p = .0001$]

s74_water How confident are you that the US can prevent terrorist attacks that destroy critical US infrastructures, like water and power plants in the next ten years?

	Not At All Confident										Completely Confident	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	8	4	6	10	12	22	13	11	8	3	4	4.88
09 web	7	3	5	10	12	22	14	13	8	3	4	5.01
08 web	9	5	9	9	11	18	12	10	10	4	4	4.75
07 web	9	4	8	12	12	18	12	12	9	3	2	4.68
07 phone	5	6	7	9	12	20	13	13	9	2	5	5.00
06 web	10	5	9	12	11	16	13	12	7	2	3	4.46
05 web	14	5	10	11	10	15	10	12	8	3	2	4.33
05 phone	6	6	8	11	11	20	12	11	9	2	4	4.80

[10 web vs. 09 web: $p = .1639$]

Efforts to prevent terrorism are causing debate about whether we should limit privacy and personal liberties in an effort to improve national security.

On a scale from one to seven where one means *strongly oppose* and seven means *strongly support*, how do you feel about the government taking the following measures in an effort to help prevent terrorism? [S75–S80 Randomized]

s75_bigbro1 Collecting personal information about you, such as your name, address, phone number, income, and social security number.

	Strongly Oppose						Strongly Support	
%	1	2	3	4	5	6	7	Mean
10 web	20	9	13	20	12	12	13	3.86
09 web	21	10	10	20	14	10	15	3.87
08 web	21	10	10	20	15	11	13	3.84
07 web	18	10	11	21	17	11	13	3.93
07 phone	27	9	7	9	14	11	23	3.98
06 web	20	11	11	17	15	12	14	3.89
05 web	24	11	9	17	14	10	14	3.75
05 phone	29	8	8	8	14	9	23	3.89

[10 web vs. 09 web: $p = .8497$]

s76_bigbro2 Collecting information about your behavior, such as where you shop, what you buy, what organizations you belong to, and where you travel.

	Strongly Oppose						Strongly Support	
%	1	2	3	4	5	6	7	Mean
10 web	27	14	13	20	10	8	9	3.29
09 web	31	15	12	18	9	7	8	3.13
08 web	30	15	13	18	11	6	8	3.14
07 web	27	14	12	18	14	7	9	3.32
07 phone	42	11	9	9	10	6	13	3.04
06 web	30	14	12	16	12	7	8	3.19
05 web	38	14	11	14	11	5	7	2.88
05 phone	45	12	9	7	11	5	11	2.86

[10 web vs. 09 web: $p = .0252$]

s77_bigbro3 Conducting pat-down searches of your clothing and inspections of your belongings.

	Strongly Oppose						Strongly Support	
%	1	2	3	4	5	6	7	Mean
10 web	17	9	11	22	14	11	15	4.02
09 web	21	9	11	19	15	11	13	3.84
08 web	19	11	12	20	14	11	14	3.89
07 web	17	11	11	20	16	12	12	3.91
07 phone	36	10	10	8	11	8	17	3.40
06 web	21	10	11	19	15	11	12	3.79
05 web	23	10	10	18	15	10	14	3.79
05 phone	37	11	9	7	13	7	16	3.34

[10 web vs. 09 web: $p = .0177$]

s78_bigbro4 Taking photographic images of you without your knowledge.

	Strongly Oppose						Strongly Support	
%	1	2	3	4	5	6	7	Mean
10 web	29	13	13	18	10	8	8	3.25
09 web	32	12	11	18	10	8	9	3.21
08 web	31	12	12	18	10	7	10	3.20
07 web	29	13	11	18	13	8	8	3.28
07 phone	48	10	7	7	9	6	12	2.85
06 web	30	13	11	17	12	7	10	3.28
05 web	38	14	9	15	11	5	8	2.93
05 phone	51	11	7	7	9	4	10	2.65

[10 web vs. 09 web: $p = .5673$]

s79_bigbro5 Taking harmless electronic scans of your hands and face.

	Strongly Oppose						Strongly Support	
%	1	2	3	4	5	6	7	Mean
10 web	16	9	8	19	15	15	18	4.23
09 web	19	8	9	19	14	13	17	4.09
08 web	18	7	10	19	15	13	18	4.18
07 web	16	8	9	19	19	13	16	4.19
07 phone	34	8	8	8	13	9	21	3.69
06 web	18	9	9	17	16	14	17	4.12
05 web	21	8	8	16	17	13	18	4.10
05 phone	35	9	8	5	14	9	20	3.60

[10 web vs. 09 web: $p = .0702$]

s80_bigbro6 Taking a sample of your DNA.

	Strongly Oppose						Strongly Support	
%	1	2	3	4	5	6	7	Mean
10 web	30	11	9	17	11	9	12	3.45
09 web	31	10	9	17	11	8	13	3.45
08 web	32	10	9	16	11	9	13	3.42
07 web	27	12	8	17	14	10	12	3.57
07 phone	46	9	7	6	9	6	18	3.12
06 web	30	11	10	15	11	10	13	3.46
05 web	34	9	8	15	12	9	14	3.45
05 phone	46	9	6	6	9	7	17	3.13

[10 web vs. 09 web: $p = .9449$]

The next few questions concern your views on the government in Washington. These do not refer to Democrats or Republicans in particular, just the government, in general.

s81_doright First, on a scale from zero to ten, where zero means *none of the time* and ten means *all of the time*, how much of the time do you trust the government in Washington to do what is right for the American people?

	None of the Time										All of the Time	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	10	8	13	12	11	18	10	9	5	2	2	4.06
10 phone	15	7	10	9	11	14	7	11	9	3	5	4.27
09 web	8	7	9	12	10	20	12	10	7	2	3	4.48
08 web	7	7	12	14	12	18	11	10	5	2	2	4.20
07 web	8	7	13	16	10	19	12	8	5	1	1	4.04
07 phone	8	7	10	13	12	23	9	10	4	1	3	4.21
06 web	9	9	15	14	11	15	10	10	5	1	2	3.98
05 web	9	10	13	13	10	15	10	11	6	2	1	4.05
05 phone	6	8	8	12	10	23	12	10	7	2	3	4.58

[10 web vs. 09 web: $p < .0001$] [10 web vs. 10 phone: $p = .1421$]

s82_USest Now, using a scale from zero to ten, where zero means you have *no confidence* and ten means you have *complete confidence*, how much confidence do you have in our government's ability to accurately assess the threat of terrorism occurring in the US?

	No Confidence										Complete Confidence	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	6	4	8	11	12	20	14	13	6	3	2	4.77
09 web	5	3	7	9	11	20	14	15	9	4	3	5.12
08 web	6	4	8	12	11	18	14	14	8	3	2	4.87
07 web	7	5	9	12	11	18	14	13	7	2	2	4.66
07 phone	6	5	7	10	10	19	15	14	10	2	3	5.01
06 web	8	5	10	12	12	16	13	12	7	3	2	4.53
05 web	9	5	10	12	10	17	12	12	9	3	2	4.49
05 phone	5	4	7	10	10	18	13	15	12	3	4	5.18

[10 web vs. 09 web: $p = .0001$]

s83_wrldest Again, using the same scale from zero to ten, where zero means *no confidence* and ten means *complete confidence*, how much confidence do you have in the US government's ability to accurately assess the threat of terrorism occurring elsewhere in the world?

	No Confidence										Complete Confidence	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	7	5	9	13	13	23	11	9	6	2	3	4.46
09 web	6	4	8	12	11	23	14	11	6	2	3	4.71
08 web	7	5	9	14	11	21	13	11	6	2	2	4.52
07 web	8	5	9	13	14	20	13	11	5	1	1	4.32
07 phone	7	6	11	12	14	21	11	10	5	1	3	4.33
06 web	9	7	11	13	12	18	13	10	4	2	2	4.18
05 web	13	9	12	14	11	17	10	7	4	1	1	3.67
05 phone	7	7	12	15	17	19	9	7	4	1	2	4.07

[10 web vs. 09 web: $p = .0037$]

Now I want to know about the level of confidence you have in different agencies to respond to terrorist attacks that cause mass casualties like 9/11. Please use a scale from zero to ten, where zero means *not at all confident* and ten means *extremely confident* when considering each of the following. [s84–s87 Randomized]

s84_respond1 How confident are you in the ability of the US Department of Homeland Security to respond to large-scale terrorist attacks in the US?

	Not At All Confident										Extremely Confident	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	6	5	8	9	11	17	11	13	10	5	5	5.07
09 web	7	5	7	6	9	17	12	14	11	6	5	5.29
08 web	7	6	8	9	11	16	11	13	11	5	4	4.99
07 web	9	6	8	9	10	18	12	12	9	4	3	4.78
07 phone	6	6	8	10	11	16	13	13	11	3	4	4.96
06 web	11	8	9	10	10	15	12	11	8	3	3	4.38
05 web	10	6	8	8	9	14	12	14	10	5	4	4.87
05 phone	5	4	5	8	8	17	12	16	15	4	7	5.62

[10 web vs. 09 web: $p = .0319$]

s85_respond2 How confident are you in the ability of the US Department of Defense, including active, reserve, and National Guard forces, to respond to large-scale terrorist attacks in the US?

	Not At All Confident										Extremely Confident	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	3	4	5	7	10	17	12	17	13	7	6	5.72
09 web	4	3	5	6	9	16	12	15	14	8	7	5.81
08 web	5	3	7	7	10	14	12	14	13	8	6	5.66
07 web	5	4	5	7	8	16	14	14	13	8	7	5.78
07 phone	3	2	4	8	8	14	14	18	15	5	8	5.95
06 web	3	4	6	9	8	15	13	14	14	7	8	5.77
05 web	5	3	5	7	8	14	9	16	15	8	11	5.99
05 phone	2	2	3	4	6	12	11	17	21	8	14	6.73

[10 web vs. 09 web: $p = .3240$]

s86_respond3 How confident are you in the ability of your state government to respond to large-scale terrorist attacks in the US?

	Not At All Confident										Extremely Confident	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	8	8	9	11	11	17	10	11	8	4	4	4.64
09 web	8	6	8	10	10	19	11	12	8	4	4	4.80
08 web	7	6	10	11	9	18	11	11	9	4	4	4.77
07 web	7	6	9	10	11	19	13	10	8	3	3	4.63
07 phone	6	4	8	10	13	19	12	12	8	3	5	4.90
06 web	8	6	10	12	12	19	12	10	6	2	2	4.37
05 web	10	7	11	11	11	17	12	10	6	3	3	4.36
05 phone	5	5	7	10	10	20	12	13	10	2	6	5.14

[10 web vs. 09 web: $p = .1253$]

s87_respond4 How confident are you in the ability of your city and county government to respond to large-scale terrorist attacks in the US?

	Not At All Confident										Extremely Confident	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	11	8	10	9	11	17	8	10	7	4	4	4.33
09 web	11	7	9	11	11	17	10	10	8	4	3	4.45
08 web	10	9	10	12	11	15	10	10	7	4	3	4.30
07 web	10	9	10	11	11	18	11	8	6	3	3	4.22
07 phone	7	7	10	13	13	17	9	12	6	2	4	4.44
06 web	12	10	12	12	11	16	10	8	5	2	2	3.94
05 web	14	9	12	11	10	16	10	8	5	3	3	3.84
05 phone	7	8	10	11	11	19	10	11	7	2	5	4.58

[10 web vs. 09 web: p = .2590]

In countries where religious freedoms are protected, preventing some religious extremists from promoting terrorism can conflict with individual rights, posing difficult tradeoffs among legal protections, moral beliefs, and requirements to provide security for citizens.

Please respond to each of the following statements on a scale from one to seven where one means *strongly disagree* and seven means *strongly agree.* [S88–S91 Randomized]

s88_extrm1 If someone *advocates* terrorism, but they do not actively participate in terrorist acts, they should be arrested and tried in a court of law, even if they are a religious leader or teacher.

	Strongly Disagree						Strongly Agree	
%	1	2	3	4	5	6	7	Mean
10 web	7	7	10	22	17	14	24	4.72
09 web	8	8	11	23	15	13	23	4.58
08 web	10	9	11	20	16	13	21	4.50
07 web	7	9	11	20	18	13	21	4.59
06 web	7	9	9	22	16	14	24	4.67
05 web (P)	7	6	10	18	17	15	27	4.82

[10 web vs. 09 web: p = .0484]

s89_extrm2 If someone *actively supports* terrorism, they should be arrested and tried in a court of law, even if they are a religious leader or teacher.

	Strongly Disagree						Strongly Agree	
%	1	2	3	4	5	6	7	Mean
10 web	2	4	5	15	15	17	41	5.53
09 web	4	4	5	16	15	17	39	5.44
08 web	3	4	6	14	14	16	42	5.46
07 web	2	4	5	15	13	18	44	5.60
06 web	2	2	4	12	14	19	46	5.75
05 web (P)	3	2	4	9	11	21	50	5.85

[10 web vs. 09 web: p = .1161]

s90_extrm3 Government law enforcement agencies should never infiltrate or spy on religious groups, even if they are suspected of advocating or supporting terrorism.

	Strongly Disagree						Strongly Agree	
%	1	2	3	4	5	6	7	Mean
10 web	38	19	11	16	7	4	5	2.66
09 web	39	16	12	15	8	5	4	2.71
08 web	38	17	14	14	7	5	5	2.71
07 web	41	21	13	14	6	3	3	2.42
06 web	41	21	12	13	6	3	3	2.44
05 web (P)	42	20	13	13	5	3	5	2.48

[10 web vs. 09 web: $p = .3981$]

s91_extrm4 If a particular religious sect or group is found to be advocating or promoting terrorism, that organization should be shut down by the government.

	Strongly Disagree						Strongly Agree	
%	1	2	3	4	5	6	7	Mean
10 web	3	4	6	16	16	16	39	5.42
09 web	4	4	5	16	16	16	39	5.40
08 web	5	5	6	15	14	15	40	5.32
07 web	4	4	7	15	15	17	37	5.32
06 web	4	4	6	14	13	18	40	5.44
05 web (P)	5	4	6	12	15	16	42	5.44

[10 web vs. 09 web: $p = .7303$]

Some people are concerned that terrorists may illegally enter the US using methods that most illegal immigrants use to seek work. Others think that is highly unlikely. Please respond to the following statements about illegal immigration using a scale from one to seven where one means *strongly disagree* and seven means *strongly agree*. [S92–S95 Randomized]

s92_illeg1 Illegal immigration poses a significant threat of terrorism to the United States.

	Strongly Disagree						Strongly Agree	
%	1	2	3	4	5	6	7	Mean
10 web	5	4	9	17	16	16	33	5.14
09 web	5	5	7	16	17	16	33	5.16
08 web	5	7	9	15	17	15	32	5.06
07 web	4	6	9	16	17	15	34	5.15
06 web	4	6	8	13	18	18	33	5.19
05 web (P)	3	4	8	13	17	18	37	5.38

[10 web vs. 09 web: $p = .8184$]

s93_illeg2 Because the issue of illegal immigration is so complicated, there is little we can do to prevent terrorists from illegally entering the United States.

	Strongly Disagree						Strongly Agree	
%	1	2	3	4	5	6	7	Mean
10 web	25	14	12	19	14	7	10	3.42
09 web	26	15	11	16	13	10	8	3.40
08 web	24	14	11	17	15	10	9	3.52
07 web	25	15	13	15	16	9	9	3.51
06 web	21	15	11	16	17	10	10	3.61
05 web (P)	24	15	13	14	14	10	9	3.48

[10 web vs. 09 web: $p = .7590$]

s94_illeg3 The US must do more to stop illegal immigrants, regardless of their objectives.

	Strongly Disagree						Strongly Agree	
%	1	2	3	4	5	6	7	Mean
10 web	3	4	6	14	12	16	45	5.55
09 web	4	3	5	14	13	16	44	5.52
08 web	4	4	6	14	13	14	44	5.45
07 web	4	4	7	13	14	15	43	5.48
06 web	4	4	6	13	13	17	44	5.52
05 web (P)	3	3	6	10	11	19	48	5.70

[10 web vs. 09 web: $p = .6309$]

s95_illeg4 The United States is dependent on immigration, and even when people enter the country illegally, they do more good than harm.

	Strongly Disagree						Strongly Agree	
%	1	2	3	4	5	6	7	Mean
10 web	30	14	13	19	11	6	6	3.10
09 web	30	13	11	20	12	7	6	3.19
08 web	28	12	11	21	13	7	8	3.33
07 web	27	13	14	21	12	7	5	3.20
06 web	25	15	13	19	13	8	7	3.30
05 web (P)	28	17	14	19	10	5	6	3.05

[10 web vs. 09 web: $p = .1910$]

The next few questions are about your beliefs concerning a variety of issues. [s96–s97 Randomized]

s96_nature First, on a scale where zero means nature is *robust and not easily damaged* and ten means nature is *fragile and easily damaged*, how do you view nature?

	Robust and *Not* Easily Damaged									Fragile and *Is* Easily Damaged		
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	3	2	5	6	8	20	13	15	11	5	11	5.97
09 web	4	2	5	7	9	17	12	15	12	5	13	5.94
08 web	2	2	5	8	7	16	11	15	15	6	12	6.14
07 web	3	2	4	7	7	16	10	16	16	6	13	6.24
07 phone	3	3	3	7	4	17	8	13	14	6	22	6.56
06 web	3	1	4	6	9	16	11	15	15	7	13	6.28
05 web	3	2	6	8	8	16	9	14	15	5	15	6.13
05 phone	3	3	3	5	5	15	7	12	15	5	27	6.85
02(E) phone	2	2	3	3	4	13	7	11	17	7	33	7.36

[10 web vs. 09 web: $p = .7939$]

s97_env On a scale where zero means the natural environment is *not at all threatened* and ten means the natural environment is on the *brink of disaster*, how do you assess the current state of the natural environment?

	Not at All Threatened										Brink of Disaster	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	2	2	4	8	7	22	18	16	9	4	7	5.73
09 web	3	2	4	6	8	19	17	16	13	4	8	5.85
08 web	2	2	5	6	7	18	14	17	15	6	7	6.04
07 web	2	2	3	5	8	17	18	19	14	5	8	6.11
07 phone	2	3	4	7	8	17	13	17	14	6	10	6.06
06 web	1	1	3	6	7	20	19	19	12	5	7	6.07
05 web	2	2	5	8	8	20	16	18	12	5	6	5.83
05 phone	2	2	3	8	8	18	15	16	12	4	11	6.03
02(E) phone	1	1	3	5	6	19	16	18	14	6	11	6.40
01 phone	1	2	3	7	9	18	16	17	14	5	10	6.22
97 phone	1	3	4	8	10	17	14	19	11	4	9	5.95

[10 web vs. 09 web: p = .1584]

Please respond to each of the following statements using a scale from one to seven, where one means *strongly disagree* and seven means *strongly agree*. [s98–s103 Randomized]

s98_CI_1 Unless directly attacked, we should not use US military force without authorization from the United Nations.

	Strongly Disagree						Strongly Agree	
%	1	2	3	4	5	6	7	Mean
10 web	19	10	10	20	17	12	12	3.87
09 web	19	9	10	21	16	11	13	3.94
08 web	17	8	10	19	15	15	16	4.17
07 web	17	8	10	18	17	14	16	4.15
07 phone	27	9	8	7	11	11	26	4.04
06 web	17	8	9	19	16	15	15	4.16

[10 web vs. 09 web: p = .3526]

s99_CI_2 Like the citizens of many other countries, officials and citizens of the United States, including members of the military, should be subject to criminal proceedings under the *International* Criminal Court in Europe.

	Strongly Disagree						Strongly Agree	
%	1	2	3	4	5	6	7	Mean
10 web	16	6	9	30	17	10	13	4.07
09 web	15	7	9	27	17	11	14	4.15
08 web	14	6	7	26	17	13	16	4.34
07 web	13	6	10	28	17	11	14	4.19
07 phone	24	8	7	8	16	14	22	4.18
06 web	14	6	8	25	18	12	17	4.29

[10 web vs. 09 web: p = .2767]

s100_CI_3 We should agree to accept internationally established limits on US production of carbon dioxide and other greenhouse gases thought to cause global warming.

	Strongly Disagree						Strongly Agree	
%	1	2	3	4	5	6	7	Mean
10 web	12	5	8	24	17	15	18	4.47
09 web	11	5	8	22	19	16	20	4.62
08 web	10	5	7	21	19	14	25	4.79
07 web	8	4	7	20	20	15	26	4.86
07 phone	14	5	7	7	14	15	39	5.02
06 web	7	4	5	21	19	19	25	4.98

[10 web vs. 09 web: $p = .0295$]

s101_MI_1 The US can never entrust its security to international organizations such as the United Nations.

	Strongly Disagree						Strongly Agree	
%	1	2	3	4	5	6	7	Mean
10 web	4	5	11	23	17	12	29	4.95
09 web	5	6	11	23	16	11	28	4.83
08 web	5	8	12	21	15	14	26	4.77
07 web	5	6	12	22	17	12	26	4.80
07 phone	12	7	8	10	17	10	35	4.83
06 web	4	6	10	22	16	13	29	4.97
05 web	7	6	8	18	14	14	33	5.01
05 phone	13	8	9	11	15	10	34	4.71

[10 web vs. 09 web: $p = .0849$]

s102_MI_2 Even though allies are important, the US must be willing to act alone to protect American interests.

	Strongly Disagree						Strongly Agree	
%	1	2	3	4	5	6	7	Mean
10 web	2	3	6	20	18	18	32	5.33
09 web	3	4	6	19	17	18	32	5.28
08 web	3	4	8	17	20	16	31	5.20
07 web	3	4	6	19	21	17	29	5.18
07 phone	8	5	6	9	15	16	42	5.34
06 web	4	4	6	16	19	20	31	5.23
05 web	6	6	6	13	16	17	36	5.24
05 phone	8	6	6	7	16	14	43	5.31

[10 web vs. 09 web: $p = .4317$]

s103_MI_3 The US must be willing to act preemptively by using military force against those that threaten us before they can attack us.

	Strongly Disagree						Strongly Agree	
%	1	2	3	4	5	6	7	Mean
10 web	6	6	8	25	19	14	22	4.75
09 web	6	5	7	23	19	17	23	4.87
08 web	8	9	9	23	19	14	19	4.50
07 web	8	8	11	24	21	13	16	4.42
07 phone	17	10	8	11	17	10	26	4.36
06 web	9	8	10	22	21	13	17	4.47
05 web	12	8	8	19	18	15	20	4.46
05 phone	18	9	9	12	17	10	26	4.32

[10 web vs. 09 web: $p = .0695$]

[s104–s112 Randomized]

s104_egal_1 What society needs is a fairness revolution to make the distribution of goods more equal.

	Strongly Disagree						Strongly Agree	
%	1	2	3	4	5	6	7	Mean
10 web	17	11	11	24	15	10	12	3.87
09 web	16	8	10	24	18	12	13	4.07
08 web	13	9	11	22	19	11	14	4.14
07 web	14	9	11	27	20	9	10	3.99
07 phone	23	9	10	13	17	10	18	3.91
06 web	13	9	10	27	17	12	12	4.09
05 web	17	10	10	24	17	10	11	3.92
05 phone	20	10	8	13	18	10	22	4.15

[10 web vs. 09 web: $p = .0069$]

s105_indiv1 Even if some people are at a disadvantage, it is best for society to let people succeed or fail on their own.

	Strongly Disagree						Strongly Agree	
%	1	2	3	4	5	6	7	Mean
10 web	5	7	11	26	20	13	18	4.58
09 web	6	8	13	24	19	15	16	4.49
08 web	8	10	13	24	18	13	14	4.27

[10 web vs. 09 web: $p = .1761$]

s106_hier1 The best way to get ahead in life is to work hard and do what you are told to do.

	Strongly Disagree						Strongly Agree	
%	1	2	3	4	5	6	7	Mean
10 web	4	5	11	24	24	16	17	4.73
09 web	4	5	9	25	23	17	17	4.75
08 web	5	5	10	23	24	17	16	4.71

[10 web vs. 09 web: $p = .6735$]

s107_egal2 Society works best if power is shared equally.

	Strongly Disagree						Strongly Agree	
%	1	2	3	4	5	6	7	Mean
10 web	6	7	10	28	20	14	16	4.55
09 web	8	7	10	26	20	15	15	4.49
08 web	5	7	10	22	22	15	18	4.66
07 web	6	5	11	25	21	16	15	4.58
07 phone	11	6	8	11	18	15	32	4.89
06 web	6	6	10	25	19	16	17	4.64
05 web	6	6	10	22	20	16	19	4.66
05 phone	9	6	9	11	17	14	34	4.98

[10 web vs. 09 web: $p = .4212$]

s108_indiv2 Even the disadvantaged should have to make their own way in the world.

	Strongly Disagree						Strongly Agree	
%	1	2	3	4	5	6	7	Mean
10 web	5	8	14	29	21	10	13	4.36
09 web	6	11	14	27	19	11	11	4.21
08 web	7	10	14	25	21	13	11	4.26

[10 web vs. 09 web: $p = .0139$]

s109_hier2 Society is in trouble because people do not obey those in authority.

	Strongly Disagree						Strongly Agree	
%	1	2	3	4	5	6	7	Mean
10 web	8	8	12	24	20	13	16	4.42
09 web	9	7	11	23	22	14	14	4.41
08 web	8	9	11	21	20	16	16	4.49

[10 web vs. 09 web: $p = .9197$]

s110_egal3 It is our responsibility to reduce differences in income between the rich and the poor.

	Strongly Disagree						Strongly Agree	
%	1	2	3	4	5	6	7	Mean
10 web	17	9	12	22	14	11	15	3.98
09 web	16	9	10	20	17	12	15	4.13
08 web	13	9	10	20	17	13	17	4.25
07 web	15	7	10	24	17	11	15	4.16
07 phone	23	10	9	10	15	10	23	4.08
06 web	14	10	11	20	16	12	18	4.23
05 web	17	9	11	20	17	11	16	4.08
05 phone	22	10	10	10	15	10	25	4.14

[10 web vs. 09 web: $p = .0494$]

s111_indiv3 We are all better off when we compete as individuals.

%	Strongly Disagree 1	2	3	4	5	6	Strongly Agree 7	Mean
10 web	8	9	12	27	17	12	15	4.32
09 web	9	8	10	25	18	14	16	4.40
08 web	8	8	11	27	17	13	16	4.38

[10 web vs. 09 web: p = .1989]

s112_hier3 Society would be much better off if we imposed strict and swift punishment on those who break the rules.

%	Strongly Disagree 1	2	3	4	5	6	Strongly Agree 7	Mean
10 web	3	4	8	23	21	17	24	5.02
09 web	4	4	8	20	20	18	26	5.08
08 web	3	5	7	21	20	17	26	5.04

[10 web vs. 09 web: p = .2858]

s113_eyeforeye If terrorists use a nuclear weapon against the US, we would be justified in using nuclear weapons to fight a war on terrorism.

%	Strongly Disagree 1	2	3	4	5	6	Strongly Agree 7	Mean
10 web	6	3	7	16	21	14	34	5.21
09 web	5	4	6	19	16	15	36	5.25
08 web	5	6	5	18	19	16	32	5.14
07 web	6	6	9	19	19	14	28	4.92
07 phone	15	7	6	9	12	11	40	4.84
06 web	6	6	8	18	16	17	29	5.00
05 web	11	6	8	18	15	13	29	4.75
05 phone	16	9	8	8	13	12	35	4.67

[10 web vs. 09 web: p = .4966]

s114_faith Now using a scale from zero to ten, where zero means *not at all important* and ten means *extremely important*, how important is religious faith in your life?

%	Not At All Important 0	1	2	3	4	5	6	7	8	9	Extremely Important 10	Mean
10 web	13	3	3	4	3	13	7	10	10	8	26	6.19
09 web	9	3	4	4	4	11	7	9	11	7	30	6.52
08 web	10	4	3	5	4	10	7	9	11	8	29	6.49
07 web	9	3	4	4	4	11	7	10	12	8	27	6.53
07 phone	5	4	3	4	4	8	4	11	9	6	42	7.28
06 web	8	3	4	4	4	9	6	10	12	8	33	6.79
05 web	8	2	4	3	3	11	6	9	11	7	36	6.91
05 phone	5	4	5	4	3	8	5	11	9	7	40	7.13

[10 web vs. 09 web: p = .0113]

s115_rel With which of the following major religions do you most identify?

Religion (%)	2010 web	2009 web	2008 web	2007 web	2007 phone	2006 web
0. None	19	14	13	2	5	NA
1. Buddhism	1	1	2	2	3	1
2. Christianity (including Protestant and Catholic)	74	76	75	87	85	84
3. Hinduism	1	1	1	1	0	1
4. Islam	1	1	1	1	0	1
5. Judaism	3	3	5	3	2	4
6. Other (verbatim)	2	3	4	3	5	9

s116_Crstn Which of the following best describes your Christian faith?

	Protestant	Catholic	Other
	1	2	3
10 web	59	34	8
09 web	58	31	11
08 web	45	30	24

s117_attend Aside from weddings and funerals, how often do you attend religious services?

	> 1/Wk	1/Wk	1-2/Mo	Few/Yr	Seldom	Never
	1	2	3	4	5	6
10 web	9	25	12	19	26	10
09 web	11	21	11	19	25	12
08 web	9	19	10	17	26	19

Finally, the last few questions concern some basic background information about you. Recall that your responses are anonymous, and our analyses will not reveal any individual's responses.

s118_zip What is the five digit zip code at your residence? (This information will only be used to compare grouped regional differences, not to identify you.) (verbatim)

s119_citizen Are you a citizen of the United States?

	No	Yes
	0	1
10 web	6	94
09 web	6	94
08 web	3	97

s120_patriot On a scale from zero to ten, where zero means *not at all proud* and ten means *extremely proud*, how proud are you to be an American?

	Not At All Proud										Extremely Proud	
%	0	1	2	3	4	5	6	7	8	9	10	Mean
10 web	1	1	1	1	2	6	4	9	12	13	51	8.50
09 web	1	0	1	1	1	5	4	7	10	11	58	8.70
08 web	1	0	1	1	1	6	5	9	12	13	52	8.59

[10 web vs. 09 web: $p = .0139$]

s121_party With which political party do you most identify?

	Democrat	Republican	Independent	Other
%	1	2	3	4
10 web	39	27	28	7
10 phone	34	33	27	6
09 web	39	29	22	9
08 web	38	33	24	5
07 web	38	33	23	6
07 phone	44	40	11	5
06 web	38	36	20	6
05 web	32	41	18	9
05 phone	43	45	9	4
03 phone	41	45	10	5
01 phone	44	45	7	4
99 phone	47	41	6	6
97 phone	43	44	10	3
95 phone	37	37	23	3
93 phone	43	39	16	2

s122_iden Do you completely, somewhat, or slightly identify with that political party?

	Not At All	Slightly	Somewhat	Completely	
%	0	1	2	3	Mean
10 web	NA	11	58	31	2.20
10 phone	NA	9	55	36	2.27
09 web	NA	8	59	33	2.25
08 web	NA	7	62	31	2.24
07 web	5	15	60	20	1.95
07 phone	0	12	57	31	2.20
06 web	7	16	62	15	1.84
05 web	NA	13	64	23	2.11
05 phone	NA	13	56	32	2.19
03 phone	NA	11	56	33	2.22
01 phone	NA	8	53	39	2.31
99 phone	NA	22	60	19	2.03
97 phone	NA	21	61	18	2.03
95 phone	NA	21	58	21	1.99
93 phone	NA	18	55	26	2.08

[10 web vs. 09 web: $p = .0844$] [10 web vs. 10 phone: $p = .0824$]

s123_ideol On a scale of political ideology, individuals can be arranged from *strongly liberal* to *strongly conservative*. Which of the following categories best describes your views?

%	Strongly Liberal 1	Liberal 2	Slightly Liberal 3	Middle of the road 4	Slightly Conserv. 5	Conserv. 6	Strongly Conserv. 7	Mean
10 web	6	13	10	36	14	14	7	4.09
10 phone	5	10	10	26	14	22	13	4.53
09 web	6	12	10	38	12	15	7	4.12
08 web	5	15	11	33	14	15	6	4.05
07 web	4	14	12	36	14	16	5	4.11
07 phone	5	12	9	29	16	22	7	4.36
06 web	4	12	12	35	15	17	5	4.16
05 web	5	12	11	31	15	21	5	4.23
05 phone	5	13	10	26	18	19	8	4.28
03 phone	6	12	10	27	18	19	9	4.34
01 phone	4	12	11	27	18	19	9	4.35
99 phone	4	13	8	29	17	20	8	4.37
97 phone	4	10	11	28	17	24	7	4.43
95 phone	2	10	11	28	21	20	7	4.46
93 phone	4	12	12	28	17	19	9	4.34

[10 web vs. 09 web: $p = .6332$] [10 web vs. 10 phone: $p < .0001$]

s124_race Which of the following best describes your race or ethnic background?

%	American Indian	Asian	Black/African-American	Hispanic	White, non-Hispanic	Other
10 web	1	3	10	4	81	1
10 phone	1	1	6	4	86	2
09 web	1	4	6	5	84	1
08 web	1	4	4	5	86	1
07 web	1	4	6	4	85	1
07 phone	3	1	6	4	83	2
06 web	1	3	5	3	87	1
05 web	1	2	3	3	89	2
05 phone	2	2	5	4	83	4
03 phone	3	1	5	4	85	1
01 phone	3	3	6	5	81	3
99 phone	2	2	7	5	79	4
97 phone	2	1	6	4	81	5
95 phone	2	2	7	4	79	6
93 phone	2	2	6	4	84	2

s125_inc Please indicate which of the following income categories approximates the total estimated annual income for your *household* for the year 2009.

%	< $10K 1	$10–20K 2	$20–30K 3	$30–40K 4	$40–50K 5
10 web	7	12	13	14	10
10 phone	3	8	8	7	9
09 web	7	11	13	13	10
08 web	5	9	14	12	10
07 web	5	10	12	13	10
07 phone	5	7	9	10	9
06 web	3	9	16	13	10
05 web	4	8	15	14	11
05 phone	4	7	11	10	11

%	$50–60K 6	$60–70K 7	$70–80K 8	$80–90K 9	$90–100K 10
10 web	12	7	6	4	2
10 phone	12	8	7	5	5
09 web	9	9	7	4	3
08 web	11	9	8	5	4
07 web	12	9	8	5	3
07 phone	11	11	8	6	3
06 web	13	10	7	5	3
05 web	12	9	7	5	3
05 phone	10	10	7	5	5

%	$100–110K 11	$110–1200K 12	$120–130K 13	$130–140K 14	$140–150K 15
10 web	3	2	2	1	1
10 phone	5	2	3	2	1
09 web	3	2	2	1	2
08 web	3	2	2	2	1
07 web	3	2	2	2	1
07 phone	4	5	3	2	2
06 web	2	2	2	1	1
05 web	3	2	2	1	1
05 phone	3	4	2	2	1

%	> $150K 16	Median
05 web	4	5
05 phone	7	6

%	$150–160K 16	$160–1700K 17	$170–180K 18	$180–190K 19	$190–200K 20
10 web	1	0	0	1	0
10 phone	2	2	1	0	1
09 web	0	0	0	0	1
08 web	1	0	0	0	0
07 web	1	0	0	0	0
07 phone	1	1	0	0	1
06 web	0	1	0	0	1

%	> $200K 21	Median
10 web	2	5
10 phone	6	7
09 web	2	5
08 web	1	6
07 web	1	5
07 phone	4	6
06 web	1	6

Median Ranges

10 web	10 phone	09 web	08 web	07 web	07 phone	06 web
$40K–50K	$60–70K	$40K–50K	$50K–60K	$40K–50K	$50K–60K	$50K–60K

05 web	05 phone	03 phone	01 phone	99 phone	97 phone	95 phone	93 phone
$40K–50K	$50K–60K	$40K–50K	$50K–60K	$40K–50K	$40K – 50K	$30K – 40K	$35K – 40K

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